

**STATE OF NEW HAMPSHIRE**  
**SITE EVALUATION COMMITTEE**

**October 23, 2018 - 9:00 a.m.**  
 49 Donovan Street  
 Concord, New Hampshire

**DAY 13**  
**Morning Session ONLY**  
**No Afternoon Session held**

*{Electronically filed with SEC 10-30-18}*

**IN RE:       SEC DOCKET NO. 2015-04**  
**Application of Public**  
**Service of New Hampshire**  
**d/b/a Eversource**  
**Energy for Certificate**  
**of Site and Facility**  
**(Adjudication Hearing)**

**PRESENT FOR SUBCOMMITTEE/SITE EVALUATION COMMITTEE:**

<b>Patricia Weathersby</b> <i>(Presiding Officer)</i>	Public Member
<b>David Shulock</b>	Public Utilities Comm.
<b>Dir. Elizabeth Muzzey</b>	Div. of Hist. Resources
<b>Charles Schmidt, Admin.</b>	Dept. of Transportation
<b>Michael Fitzgerald</b>	Dept. of Env. Services
<b>Susan Duprey</b>	Public Member

**ALSO PRESENT FOR THE SEC:**

Michael J. Iacopino, Esq.       Counsel for SEC  
*(Brennan, Lenehan, Iacopino & Hickey)*

Pamela G. Monroe, SEC Administrator

*(No Appearances Taken)*

**COURT REPORTER:** Cynthia Foster, LCR No. 14

*{SEC 2015-04} [Morning Session ONLY] {10-23-18}*

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**P R O C E E D I N G S****(Hearing resumed at 9:00 a.m.)**

PRESIDING OFFICER WEATHERSBY: Good morning, everyone. Welcome back to the adjudicative hearings for the Seacoast Reliability Project. Today our witness panel is Durham UNH witnesses. Mr. Jones, Mr. Famely, Mr. Dacey and Mr. Schultz. Welcome, gentlemen. If the witnesses could be sworn, please?

(Whereupon, **Matthew Shultz, Michael Dacey, Joseph Famely** and **Stephen Jones** were duly sworn by the Court Reporter.)

**MATTHEW SHULTZ, SWORN****MICHAEL DACEY, SWORN****JOSEPH FAMELY, SWORN****STEPHEN JONES, SWORN****DIRECT EXAMINATION****BY MR. PATCH:**

Q Good morning.

A Morning.

Q Would you each please state your name and give your address for the record? You can start, why don't we go left to right.

A (Shultz) Sure.

1 Q My left.

2 A (Shultz) My name is Matt Shultz, and I'm at 107  
3 Waterhouse Road. I work for Woods Hole Group.  
4 I'm the Senior Coastal Engineer there.

5 A (Dacey) Mike Dacey with GeoInsight. I live at  
6 16 River Road, West Newbury, Mass.

7 A (Famely) Joe Famely with Woods Hole Group.  
8 Address is 107 Waterhouse Road in Bourne,  
9 Massachusetts.

10 A (Jones) Steve Jones. I'm a professor at UNH at  
11 33 Woodridge, Durham, New Hampshire.

12 Q And could you each, I think you've done a little  
13 bit of this, but say who you're employed with  
14 and in what capacity, give just a brief summary  
15 of your qualifications?

16 A (Shultz) Sure. Once again, I work at Woods Hole  
17 Group. I'm the Coastal Modeling and Engineering  
18 team lead there, and I have over 15 years'  
19 experience working in a marine environment  
20 studying coastal hydrodynamics, sediment  
21 transport processes and water quality.

22 A (Dacey) I'm a Senior Hydrogeologist with  
23 GeoInsight. I have 31 years of experience  
24 essentially dealing with contaminated fate

1 transport issues and site assessment, and also I  
2 have experience with sediment dredging projects  
3 and coastal sedimentation processes.

4 A (Famely) Joe Famely. I'm a Senior Environmental  
5 Scientist with Woods Hole Group. I've conducted  
6 numerous ecological risk assessments over my  
7 18-year career as an environmental consultant  
8 following state and federal guidelines to  
9 evaluate potential impacts associated with  
10 sediment, soil and surface water contamination.  
11 And I've also evaluated ecological risks,  
12 associated with dredging projects and dredging  
13 material management.

14 A (Jones) Hello again. I'm a Research Associate  
15 Professor at University of New Hampshire, the  
16 Department of Natural Resources and the  
17 Environment as well as Molecular, Cellular and  
18 Biomedical Sciences. I've been out at the  
19 Jackson Estuarine Lab 31 years which is right in  
20 Little Bay and Great Bay.

21 I've been studying, my expertise is mostly  
22 in environmental toxicology and microbiology,  
23 although I've done a lot of assessments of  
24 contaminant transport and fate and sediments in

1 water and especially in shellfish. Shellfish  
2 safety is one of my main sources of research  
3 areas.

4 Q Now, are you the same witnesses who submitted  
5 Prefiled Testimony in this docket that was dated  
6 July 24th of 2017, which along with three  
7 appendices was marked, has been marked as TD-UNH  
8 Exhibit 2; is that correct?

9 A (All) Yes.

10 Q Are you the same witnesses who also submitted  
11 testimony in this docket, Supplemental  
12 Testimony, which has been marked as TD-UNH 3,  
13 that was submitted on July 20th of this year?

14 A (All) Yes.

15 Q Do you have any corrections or updates to either  
16 of those Prefiled Testimonies?

17 A (Fameley) I have one revision.

18 Q Okay.

19 A (Fameley) On the Prefiled Testimony dated July  
20 24th, 2017, I would remove or strike page 8,  
21 lines 11 through 23, which speak to the use of  
22 the fine grain sediment in the mass balance  
23 model, and that's based on an updated  
24 understanding of the treatment of the suspended

1 particles in the Applicant's model.

2 Q Are there any other corrections?

3 A (Shultz) Yes. There's a minor change to the  
4 Supplemental Testimony. On page 8, line 26, a  
5 condition was referenced incorrectly. Condition  
6 number 49 should be changed to be Condition  
7 number 58.

8 Q Okay. And with those changes, if you were asked  
9 the same questions contained in both exhibits  
10 today, would your answers be the same?

11 A (All) Yes.

12 Q And the testimony that you filed in July of this  
13 year was based in part at least on the DES Final  
14 Decision that was issued in February of 2018,  
15 correct?

16 A (All) Correct.

17 Q And you're aware of the fact that after that  
18 Supplemental Testimony, on August 31 of this  
19 year DES issued what amounts to a modification  
20 of their February 2018 Final Decision on permit  
21 conditions. You're aware of that, correct?

22 A (All) Yes.

23 Q And is it your understanding that this was a  
24 product of further discussions between

1 Eversource and DES?

2 A (All) Yes.

3 Q Were you privy to or aware of any of those  
4 discussions?

5 A (All) No.

6 Q Do you have anything you would like to comment  
7 upon based on your review of the latest DES  
8 filing on August 31st?

9 A (Dacey) Well, my observation on the August 31st  
10 filing was that there wasn't really a lot of new  
11 information over the February filing from the  
12 DES -- is that okay?

13 Q That's better. Thanks.

14 A (Dacey) -- from the February filing from the  
15 DES. However, there were a lot of issues that  
16 were postponed or it was stated that monitoring  
17 plans, various monitoring plans would be  
18 submitted at a later date for DES review, and in  
19 our mind, the monitoring plans are the most  
20 critical part of this whole project because that  
21 really lays out what systems would be in place  
22 to protect the Bay during the crossing. So it  
23 appears that those monitoring plans won't be  
24 available for review prior to the SEC decision

1 on this case. So that's our overall comment on  
2 the August 31st DES order.

3 Q Okay. Any other comments on the August 31st  
4 letter?

5 A (Famely) I would add that based on our current  
6 understanding of the water quality evaluation,  
7 there's still some uncertainties in that  
8 evaluation and that assessment of the elutriate  
9 analyses, either the chemistry for the toxicity  
10 would add some more certainty to that  
11 assessment, and that's not in the DES  
12 conditions.

13 MR. IACOPINO: I'm sorry. Can you repeat  
14 that? I didn't hear what your concern was.  
15 With what?

16 A (Famely) So based on our current understanding  
17 of the water quality evaluation that was  
18 performed by the Applicant, there are still some  
19 uncertainties and based on the calculations some  
20 potential water quality violations, and so an  
21 elutriate test with is the next step in the  
22 Regional Implementation Manual guidance would  
23 reduce those uncertainties by providing some  
24 measurements.

1 MR. IACOPINO: And that's an elutriate  
2 test?

3 A (Famely) Correct.

4 Q Okay. Thank you.

5 MR. PATCH: The witnesses are available for  
6 cross-examination.

7 PRESIDING OFFICER WEATHERSBY: Does the  
8 Town of Newington have any questions?

9 MR. HEBERT: No. I think we're all set.

10 MR. FITZGERALD: Can I ask a clarifying  
11 question?

12 PRESIDING OFFICER WEATHERSBY: Yes.  
13 Mr. Fitzgerald.

14 MR. FITZGERALD: Could you explain what an  
15 elutriate test is?

16 A (Famely) Sure. It's part of the dredging  
17 evaluation where essentially the material that  
18 may be suspended in the water column, when that  
19 dredging material is disposed or deposited  
20 through the water column, it sort of mimics that  
21 process. So you take a or a lab takes a  
22 sediment sample and agitates it in water,  
23 usually site water, and dilutes it in a series  
24 of dilutions that would mimic the various

1 dilutions that would occur at the site given the  
2 model parameters, and compares, then measures  
3 the concentrations of contaminants in that  
4 water. So it's looking for what the  
5 concentration of contaminants in the water that  
6 has partitioned from the sediment into the  
7 dissolved phase of the water, and then that can  
8 be compared to water quality criteria.

9 If there's some uncertainties or lack of  
10 water quality criteria, there is also an  
11 elutriate toxicity test which basically does the  
12 same procedure, treats the sediments the same  
13 way, agitates it, performs serial dilutions, but  
14 then exposes marine organisms over typically a  
15 48-hour period to those, to that water to see if  
16 there are any toxic effects.

17 MR. FITZGERALD: Thank you.

18 PRESIDING OFFICER WEATHERSBY: Attorney  
19 Irwin.

20 MR. IRWIN: Thank you.

21 **CROSS-EXAMINATION**

22 **BY MR. IRWIN:**

23 Q Good morning.

24 A (All) Morning.

1 Q We've met before. My name is Tom Irwin, and I  
2 represent the Conservative Law Foundation.

3 I think most of my questions will be  
4 primarily be directed to Dr. Jones based on his  
5 experience specifically with the Great Bay  
6 Estuary, but you should all feel free to answer  
7 any of my questions if you have further  
8 elaborations or something to add.

9 On page 12 of your Prefiled Testimony,  
10 that's TD-UNH Exhibit 2, you discuss concerns  
11 about the presence of bacterial cells and  
12 viruses in sediments and their effects on  
13 oysters. Could you elaborate on that?

14 A (Jones) So Great Bay Estuary being a receiving  
15 water for 7 different rivers that empty into it  
16 that have wastewater treatment facilities and  
17 impervious surfaces of urban areas are subject  
18 to point/nonpoint source solution that gets into  
19 the estuaries and is suspended, but at some  
20 points these contaminants will settle out into  
21 the sediment, and this includes bacteria,  
22 viruses, parasitic pathogens of humans and also  
23 of, it also can stir up pathogens of oysters and  
24 so there are, so the sediment is really a sort

1 of a resting place for these organisms. They  
2 remain viable, and if they're stirred up back  
3 into the water, column oysters and other bivalve  
4 shellfish are filter feeders. They take them  
5 up, they bring them into their tissue, they're  
6 now live and potentially, people eat them, they  
7 can get sick. So there's a public health as  
8 well as an oyster health concern about stirring  
9 sediments up and resuspending these  
10 microorganisms that have accumulated in the  
11 surface sediments.

12 Q In your opinion, has the Applicant adequately  
13 and has New Hampshire DES adequately analyzed  
14 these specific concerns related to pathogens as  
15 they relate to oysters, oyster health and public  
16 health?

17 A (Jones) DES shellfish program does a really good  
18 job of analyzing water quality, and if you look  
19 at the map of how they, of where they classify  
20 waters relative to bacterial contamination, it's  
21 a very complicated map, and they have a lot of  
22 sites where they sample water for these  
23 contaminants, and they classify accordingly.  
24 Like you can't oyster over here. You can't clam

1 over here. You can here.

2 However, there's no analysis of sediments  
3 involved with that.

4 Q Okay. I'd like to ask the question again.

5 A (Jones) Yes.

6 Q In the context of this proceeding --

7 A (Jones) Right.

8 Q -- New Hampshire DES's review of the Seacoast  
9 Reliability Project, the Applicant's review of  
10 analysis of potential environmental impacts, has  
11 there been an adequate treatment of this issue  
12 of pathogens in sediments that could be  
13 resuspended to impact oysters and public health?

14 A (Jones) To my knowledge, there's been no  
15 assessment of that.

16 Q I'd like to show you what's been marked as CLF  
17 Exhibit 24.

18 Dr. Jones, are you familiar with this  
19 document which relates to a recent announcement  
20 by the Department of Environmental Services  
21 about shellfish harvesting in the Great Bay  
22 Estuary?

23 A (Jones) Yes. In fact, we have an ongoing  
24 project that helps to evaluate, set up the

1 scientific basis for this.

2 Q Could you explain exactly what this recent  
3 announcement relates to and what it has  
4 determined?

5 A (Jones) So one of the, FDA requires state  
6 shellfish programs to evaluate any waters where  
7 they allow commercial or recreational  
8 shellfishing, and part of that is use of dye  
9 studies to figure out how wastewater treatment  
10 facility effluent can potentially pollute areas;  
11 how much that's diluted as it's discharged into  
12 the estuary, in other words, and at what point  
13 is this dilution adequate so that it's safe to  
14 harvest shellfish.

15 They did a dye study, FDA, EPA, DES, did a  
16 dye study of the Portsmouth wastewater treatment  
17 facility and found that sort of, well, they  
18 found that the potential for contamination of  
19 the oyster farms that are in upper, was it upper  
20 or lower? It's around, I get that mixed up.  
21 Yeah. The more northern portion of Little Bay  
22 will be contaminated during the wintertime with  
23 viruses, and so what they've done is that  
24 they've drawn a line across, right, yeah, from

1 the mouth of Oyster River over to Fox Point, and  
2 anything north of that will be, is now closed  
3 from October 7th through I think March of, March  
4 30th of 2019, and they'll do that again next  
5 year from October through March, '19 to '20.

6 The reason that it's only during the  
7 wintertime is that these viruses that are in  
8 wastewater effluent really are not a problem  
9 during the summer. It's a hard thing to explain  
10 but they are a problem like norovirus,  
11 hepatitis, those kinds of viruses are not  
12 adequately treated in some wastewater treatment  
13 facilities, including Portsmouth's.

14 Portsmouth will upgrade in, finish their  
15 upgrade in 2020, and thereafter this whole  
16 condition around closing that part of Little Bay  
17 will be probably lifted. It won't be necessary  
18 anymore. They'll do another dye study and  
19 probably confirm that.

20 Q So Dr. Jones, along with the announcement that  
21 the upper position of Little Bay is now closed,  
22 there was an announcement that a portion of  
23 Little Bay that has been closed will now be  
24 open; is that correct?

1 A (Jones) There's another part of that, right,  
2 where -- let's see, yes. Expansion effective  
3 January 1st, 230-acre area just north of Adams  
4 Point will be substantially reduced in size.  
5 Right. So that red area that's just above Adams  
6 Point, that big crossing red area is going to be  
7 reduced in size.

8 Q So that's an area that has been closed, portions  
9 of which will soon be open for harvesting?

10 A (Jones) Yes.

11 Q Is that area in close proximity to the Seacoast  
12 Reliability Project?

13 A (Jones) Yeah. Looks like the boundary, it's  
14 either over it or right next to it. Extremely  
15 close proximity.

16 Q Does that, well, does that cause you any concern  
17 about respect to the impacts of this Project on  
18 oyster resources that will now be opened to  
19 public harvesting?

20 A (Jones) Yes. In reference to this new open area  
21 which now, one of the things that's happening is  
22 that New Hampshire has, farming of oysters in  
23 New Hampshire wasn't even in existence 15 years  
24 ago. Since then there's something like, there's

1 in the order of 15 to 25 licensees now. I think  
2 there's 20 farms. So there's a lot of small  
3 business owners that are growing oysters, and  
4 the area where they can do this is confined to  
5 Little Bay. So this new closure on the northern  
6 end of Little Bay, they're not going to be able  
7 to sell oysters out of that area. The only area  
8 where they can is in the part of Little Bay  
9 that's closer to where the cable crossing will  
10 occur.

11 The expansion of area south of the cable  
12 crossing which Attorney Irwin just pointed out,  
13 that's now new area where they can expand into.  
14 And so there's definitely a concern of stirring  
15 up sediments, causing contaminants to get into  
16 the water column and spreading around and  
17 causing impact to these areas.

18 If you don't touch the sediments, they just  
19 stay there. They're not disturbed, they won't  
20 affect anything. If you plow up 5 to 8 feet of  
21 sediments, you're going to disturb a lot of  
22 these, and you're going to impact the water  
23 quality.

24 Q Dr. Jones, I'd like to just turn your attention

1           briefly to the State of Our Estuaries Report.  
2           This is a document published by the Piscataqua  
3           Region Estuaries Partnership. Am I correct that  
4           you serve on the Technical Management Committee  
5           for the Piscataqua Regional Estuaries  
6           Partnership?

7           A     (Jones) Yes. I was Chair of that for about 14  
8           years. Recently I'm a member now.

9           Q     So I take it you are familiar with the 2018  
10          State of Our Estuaries Report?

11          A     (Jones) Yes.

12          Q     What's the intent of these periodic State of Our  
13          Estuaries Reports that are published by PREP?

14          A     (Jones) It's an opportunity for this  
15          organization which is funded by the US  
16          Environmental Protection Agency to report on the  
17          results of their efforts and other people's  
18          efforts to gather information about the status  
19          and trends of things like water quality  
20          contaminants, biologic, you know, habitats that  
21          are of concern, and other social dimensions,  
22          impervious surfaces, development, a lot of  
23          indicators that inform us as to what the health  
24          of the ecosystem is and what the water quality

1 conditions are.

2 So this is an opportunity, in this case  
3 it's been five years since they reported so this  
4 2018 report is an update and pretty recent  
5 update, very comprehensive update of a lot of  
6 the conditions that we use to evaluate whether  
7 this is a healthy estuarine system or not.

8 Q Would you agree that this is science and data  
9 driven?

10 A (Jones) Yes.

11 Q The output of this product?

12 A (Jones) It's all, there's another report that  
13 backs this up that is a thicker document that's  
14 a technical document that lays out all the data  
15 that were used and how they were analyzed.

16 Q So getting back to the issue of oysters, the  
17 State of the Estuaries Report addresses oysters  
18 as an indicator of estuary health, correct?

19 A (Jones) Yes.

20 Q You mentioned earlier that concerns about  
21 pathogens relate not only to public health but  
22 to the health of the oyster population itself,  
23 correct?

24 A (Jones) Correct.

1 Q Could you describe the impacts that pathogens  
2 had on the Great Bay Estuary oyster population  
3 in the 1990s?

4 A (Jones) Yes. About midway through the 1990s the  
5 environment, the water, the water quality was  
6 just right and probably other factors were just  
7 right where several pathogens or one pathogen in  
8 particular just took over and killed off about  
9 90 percent of the oysters in Great Bay Estuary.  
10 So these were naturally occurring oysters in  
11 natural beds, and it destroyed these.

12 It's now endemic in the population, and so  
13 every year there continues to be die-off of  
14 oysters, commercial oysters and wild oysters,  
15 because of two pathogens in particular.

16 Q And looking at page 32, the State of Our  
17 Estuaries Report, CLF Exhibit 22, there's a  
18 statement that the number of adult oysters  
19 decreased from over 25 million in 1993 to 1.2  
20 million in 2000. Did I read that correctly?

21 A (Jones) Yes.

22 Q How has that population recovered in the years  
23 since?

24 A (Jones) So it has recovered. I mean, that was a

1 decimating event and time period. It has  
2 recovered to some extent. There are, for a  
3 number of reasons naturally it's recovered.  
4 Oysters have some resilience, and they, the ones  
5 that survived seemed to be able to perpetuate to  
6 some extent. They're still susceptible to these  
7 pathogens. There's also been restoration  
8 efforts that have increased the populations of  
9 these oysters.

10 Q But Dr. Jones, has the estuary recovered to a  
11 point of even approaching the 25 million oysters  
12 that were present in the early 1990s?

13 A (Jones) No. I mean, the impact of the oysters,  
14 the ecosystem services that oysters provided to  
15 the estuary for a long time are really just a  
16 fraction, they're acting as a fraction as to  
17 what they used to act as.

18 Q Looking again at 32 of PREP's State of Our  
19 Estuaries Report, PREP has established a goal of  
20 continuing to restore the population; is that  
21 correct?

22 A (Jones) Yes.

23 Q Looking at page 23, I'm sorry, 33 of the State  
24 of Our Estuaries Report, is sedimentation a

1 concern?

2 A (Jones) Yes. It states sedimentation is another  
3 stress on oysters, and it relates to the issue  
4 of available substrate. It also can stress  
5 them, if they're filter feeding and there's  
6 suspended sediments in the water, it can stress  
7 them that way as well, and make them more  
8 susceptible to these diseases, by the way.

9 Q I'd like to turn to the issue of nitrogen.

10 A (Jones) Um-hum.

11 Q In your Prefiled Testimony, you raise concerns  
12 about nitrogen. How much nitrogen do you  
13 anticipate will be released as a result of the  
14 proposed jet plow?

15 A (Jones) We together made a calculation of that.  
16 I don't have the number right in front of me.  
17 It was part of the one of the prefiled  
18 documents.

19 Basically to put it in the context, we  
20 compared the amount of nitrogen that would be  
21 released, and this is based on studies in very  
22 close proximity to the cable crossing where UNH  
23 professors had looked at what amount of nitrogen  
24 was present in the pore water of the sediment.

1           So you have the sediment particles and you  
2           have the nitrogen that is actually in the water  
3           between the particles, and this would be  
4           released along with the particles, but this  
5           would be soluble nitrogen into the water column.

6           And based on those studies we made a  
7           calculation that basically says that it would be  
8           300 times the amount of nitrogen that the Durham  
9           wastewater treatment facility discharges in a  
10          day. Those are approximate estimates.

11        Q    I believe, and I don't know if you have your  
12            Prefiled Testimony with you, but in your  
13            Supplemental Prefiled Testimony, page 9, lines  
14            29 to 38, there's a comparison of that projected  
15            nitrogen load with the amount of nitrogen  
16            reduction that Durham is hoping to achieve  
17            through stormwater management. Could you  
18            comment on that? It's Exhibit TD-UNH 24 Exhibit  
19            3.

20        A    (Jones). So, from memory, so part of what's  
21            going on is that EPA, the whole estuary is  
22            listed as impaired for nitrogen, and the  
23            strategy that is being used is to reduce  
24            wastewater effluent levels of nitrogen into the

1 estuary, and each municipality is having to  
2 address this. And Durham has done a really good  
3 job of reducing nitrogen levels, but it's not  
4 quite to the extent that EPA really desires.

5 And so one of the strategies is that the  
6 towns have to come up with a plan to reduce  
7 nonpoint source pollution of nitrogen within the  
8 watershed wherever they can at quite a cost to  
9 the town, and the amount of nitrogen that the  
10 town came up with that they can reduce was quite  
11 a bit less than what would be released in this  
12 plowing event.

13 Q And I assume there's an economic cost to that  
14 stormwater management?

15 A (Jones) Yes. I think, yeah. Let's see. It was  
16 half a million to two million or something like  
17 that. I don't have that right in front of me,  
18 but --

19 Q Why, and this is, again, anyone can answer, but  
20 why is nitrogen a concern?

21 A (Jones) So nitrogen is a concern because it is  
22 normally the limiting nutrient in estuarine  
23 water, in coastal waters. That means that if  
24 it's, if you have a pristine system, nitrogen is

1 the thing that is limiting growth of plants, in  
2 particular. If you have elevated levels of  
3 nitrogen in a system, the plants now are no  
4 longer limited and they grow more, and what  
5 happens to plants is they grow and they die, and  
6 when they die they take up oxygen and so there's  
7 a depletion of oxygen in the system which is not  
8 desirable for aerobic organisms for fish and  
9 other organisms that need oxygen.

10 The other thing that it does is that it  
11 stimulates, well, in the same vein, nitrogen  
12 stimulates phytoplankton which are small plants  
13 that are in the water column or on a sediment  
14 surface in particular. This is why a lot of  
15 them reside in Great Bay. And the problem with  
16 that is that they can also, the higher  
17 concentrations of phytoplankton in the water  
18 impair light penetration into the estuary.

19 Well, so what. Well, one of the main  
20 species of concerns in the estuary that is now  
21 also declining is eelgrass. It's a critical  
22 habitat for fish. It's a nursery area, and the  
23 more that light penetration is impaired by  
24 phytoplankton in the water column, the less

1 light gets to the eelgrass, and it weakens the  
2 eelgrass. It actually prevents eelgrass from  
3 growing in some deeper areas. It also weakens  
4 it, and it becomes more susceptible to disease  
5 as well.

6 Q And Dr. Jones, is it really the loss of eelgrass  
7 habitat that has been driving regulatory  
8 decisions requiring municipalities like Durham,  
9 Exeter, Newmarket, Dover, Portsmouth to upgrade  
10 wastewater treatment facilities to reduce  
11 nitrogen output?

12 A (Jones) Yes. That is the cornerstone of the  
13 policy. I'll just add that one other dimension  
14 of plant growth is that at higher nitrogen  
15 concentrations, seaweed species that normally  
16 would not be there now can thrive. So you can  
17 imagine in a pristine environment, you're  
18 getting nice rockweed, you get seaweeds that are  
19 fine. They're part of the ecosystem, they're  
20 not causing a problem.

21 The higher the nitrogen concentration, now  
22 it allows certain of these green seaweeds to  
23 grow. They like high nitrogen concentrations.  
24 So what happens is that they now compete with

1 eelgrass for the same habitat space and so  
2 eelgrass is now, because of elevated nitrogen  
3 levels, it's threatened because of pathogen  
4 weakness, pathogens, it's not growing in areas,  
5 the phytoplankton are blocking the light and  
6 these macroalgae are taking up space or  
7 competing with them so they're not able to  
8 colonize areas that they used to colonize.

9 Q Dr. Jones, just quickly, I'm showing you page 16  
10 of the 2018 State of the Estuaries Report.  
11 Nutrient loading, is it a concern, is it a  
12 management concern for the estuary as reported  
13 there?

14 A (Jones) Yes. This is one of the indicators so  
15 it's a measure again of how well the, you know,  
16 how the water quality is in Great Bay. I was at  
17 a meeting yesterday of PREP where they're  
18 reviewing what they're going to use for  
19 indicators, and this remains a cornerstone  
20 indicator for the estuary.

21 Q Just very quickly, you mentioned eelgrass.  
22 Eelgrass also has been identified as a  
23 management objective and indicator in the State  
24 of Our Estuaries Report?

1 A (Jones) Yes. And it continues to be a,  
2 considered a highest priority indicator along  
3 with nutrient loading.

4 Q And for the record, I'm showing you page 23 of  
5 the State of Our Estuaries Report.

6 So with respect to eelgrass, what has been  
7 the trend with respect to the presence of  
8 eelgrass in Little Bay?

9 A (Jones) So Little Bay has historically had quite  
10 abundant eelgrass. There has been a lot of  
11 research on what has been historical habitat and  
12 what hasn't been so that it directs our  
13 restoration efforts and other considerations.

14 At this point in time, recently, up until  
15 recently, eelgrass in Great Bay has been very  
16 spotty. So this exhibit shows spotted green  
17 areas in what, you can see where Little Bay,  
18 where the Little Bay tidal is. I think that's  
19 called Upper Little Bay. So there is, that's  
20 historic eelgrass habitat, and it's on both  
21 sides. Again, it's a plant that grows  
22 underwater, and it grows in shallow areas. And  
23 you're going to confine it in the 40-foot  
24 channel. So it's, the habitat is along both the

1 eastern side and the western side of Upper  
2 Little Bay as well as the Oyster River and Lower  
3 Little Bay. You can see patches of that.

4 Q Thank you. So for the record, what I'm showing  
5 is CLF, what's been marked as Exhibit CLF  
6 Exhibit 25. This is mapping prepared by the  
7 Nature Conservancy. Are you familiar with  
8 Nature Conservancy and its work in the Great Bay  
9 Estuary?

10 A (Jones) Yes. I worked with Alix Laferriere and  
11 advisor on things as well.

12 Q I just want to be clear with respect to this  
13 image. There is cross-hatching, and it doesn't  
14 show up well, at least on the big screen. There  
15 is cross-hatching down the west and east sides  
16 of Little Bay. Does that cross-hatching  
17 indicate the historic presence of eelgrass?

18 A (Jones) Yes. According to the key, that's what  
19 it indicates.

20 Q And from your view of this map, does any of that  
21 cross-hatching cross the area at issue with  
22 respect to the Seacoast Reliability Project?

23 A (Jones) Yes. It appears that about half of the  
24 length of the cable crossing would be crossing

1 historic eelgrass habitats, maybe a third to a  
2 half.

3 Q Now, you're aware of the concrete mattresses  
4 that are proposed as part of this Project?

5 A (Jones) Yes.

6 Q Can eelgrass grow on concrete mattresses?

7 A (Jones) I don't think anyone has ever taken such  
8 a foolish study, but there's no way that  
9 eelgrass would grow on a concrete mattress.

10 Q So are you concerned about concrete mattresses  
11 concerning space that otherwise could be in the  
12 future eelgrass habitat?

13 A (Jones) Yes.

14 Q On that point, looking to the future, the fact  
15 that there's no eelgrass in Little Bay proper  
16 right now, does that mean there will never be  
17 eelgrass there in the future?

18 A (Jones) No. In fact, Dr. Short who is the  
19 resident eelgrass expert would tell you that  
20 eelgrass is recovering in Little Bay, and it  
21 happens to coincide with Durham's relatively  
22 recent upgrade of the wastewater treatment  
23 facility to reduce nitrogen inputs. There may  
24 be other factors concerned, but eelgrass is

1 recovering in Little Bay.

2 Q Shifting gears to sediments. Are sediments a  
3 concern to the health of eelgrass?

4 A (Jones) Yes.

5 Q And is the term total suspended solids another  
6 term for sediments?

7 A (Jones) Yes. That would be the -- so sediments  
8 are what is at the bottom of the water column in  
9 a solid, relatively solid form. Suspended  
10 solids is a measure of particle matter that's in  
11 the water column.

12 Q So the two are related?

13 A (Jones) Yes.

14 Q Showing you page 15 from the 2018 State of Our  
15 Estuaries Report, suspended solids are a  
16 management concern for the health of the  
17 estuary?

18 A (Jones) Yes. And again, from yesterday's  
19 meeting it remains a highest priority indicator  
20 for the estuary.

21 Q I don't know if any of you were present,  
22 unfortunately I was not, for the September 20th  
23 hearing here. But during that, that was when  
24 the Applicant's Environmental Panel was

1           testifying. During their testimony, there was,  
2           there were questions asked about how much  
3           sediment will be released into the water column  
4           as a result of the Seacoast Reliability Project  
5           as a result of the jet plow. And as you'll see,  
6           this is page 71 of testimony from that morning.  
7           Ms. Allen who is one of Eversource's  
8           environmental consultants provided testimony to  
9           the effect that a back-of-the-envelope  
10          calculation yields about a thousand cubic yards  
11          of sediment from the jet plow. Her testimony  
12          went on to state that you, your panel, had also  
13          done a rough calculation, and that these two  
14          were fairly consistent.

15                 Just to get a sense of what a thousand  
16          cubic yards means, in terms of scale, how does  
17          that compare to the sort of sediment loads we  
18          see coming from the watershed into the estuary?

19         A         (Jones) I can start on that. The tributaries,  
20          the rivers that I mentioned, do discharge  
21          suspended sediments into the estuary. This is  
22          monitored by several agencies and UNH together,  
23          I think, on a consistent basis, and except for  
24          storm events, the suspended sediments that

1 basically come over dams into the estuaries is  
2 relatively small. It's not, it's a concern  
3 because it's continuous source of more sediments  
4 to the estuary, but it's, I don't think it would  
5 be a thousand cubic yards in any finite time  
6 period.

7 Q I'm showing you what's been marked, I believe,  
8 as CLF Exhibit 27. This is a May 2010 Final  
9 Report of the Commission to Study Causes,  
10 Effects, and Remediation of Siltation in the  
11 Great Bay Estuary. Have you ever seen this  
12 report?

13 A (Jones) I've seen it. I haven't studied it in a  
14 lot of detail.

15 MR. IACOPINO: What was the Exhibit Number?

16 MR. IRWIN: 27. It should come in today  
17 electronically.

18 BY MR. IRWIN:

19 Q This is page 11 from that report, and it states  
20 the overall sediment yield, i.e., some of the  
21 loads divided by sum of drainage area from Great  
22 Bay Estuary watersheds was 7.1 tons per, per  
23 year per square mile in 2002 to 2005, and 9.1  
24 tons per year per square mile in 2006 to 2008.

1           Can any of you provide a, you know, we're  
2           talking cubic yards versus tons, a comparison of  
3           a thousand cubic yards to, a conversion of cubic  
4           yards to tons that would allow us to compare the  
5           magnitude of this load projected from the  
6           Seacoast Reliability jet plowing to sediment  
7           inputs from the watershed as a whole?

8           A     (Dacey) Standard conversion would be 1.5 tons  
9           per cubic yard.

10          Q     Can you apply a formula to get us to an  
11          apples-to-apples comparison using that  
12          conversion?

13          A     (Jones) It's 1.5 times a thousand, isn't it? So  
14          that's 1500 tons.

15          Q     And then if you were to divide that by 9.1 tons,  
16          would that allow to you provide some comparison  
17          with, to calculate the square miles basically of  
18          watershed area that would contribute an  
19          equivalent amount of sediment load?

20          A     (Jones) 1500 divided by 9 is approximately 10.  
21          That's about 15 times as much. No. 1500? It's  
22          a lot more.

23          A     (Shultz) I believe it would be 150.

24          A     (Jones) Sorry. You guys are better at math than

1 I am.

2 Q 150 square miles?

3 A (Jones) Using this comparison.

4 A (Shultz) Would be 150 times the 9.1 tons.

5 Q Okay. I see. I guess what I'm trying to ask  
6 you is if you can tell us how many square miles.  
7 If each square mile within the watershed is  
8 putting out an average of 9.1 tons, how many  
9 square miles does this sediment release equate  
10 to?

11 A (Jones) 165 square miles.

12 Q Thank you. A few questions about the jet plow  
13 and the environmental review process.

14 Are you aware of the most recent projected  
15 crossing rate, the jet plow crossing rate  
16 presented by the Construction Panel and the  
17 Environmental Panel in this proceeding?

18 A (Dacey) There were various numbers that came  
19 about through the Construction Panel and the  
20 Environmental Panel, and the high end of that,  
21 as I understand it, was about 15 hours. So the  
22 crossing time versus crossing rate.

23 Q Do you have any concerns about this, those  
24 crossing times, that testimony?

1 A (Dacey) Well, I think it's actually a critical  
2 concern because the model that was done, the  
3 revised sedimentation model, uses as a base case  
4 a 7-hour crossing time. The results are key  
5 because it showed the sediment distribution  
6 primarily that occurred during this 7-hour  
7 period was purposely done on an ebb tide, in  
8 other words, the sediments would carry to the  
9 north. If you go beyond the 7-hour period,  
10 you're actually reversing the tidal currents and  
11 going to the south.

12 So those were evaluated in some of their  
13 sensitivity analysis when they used a slow rate  
14 that was similar to the 15-hour crossing time,  
15 and it showed sediment distribution going far to  
16 the south. However, when they submitted their  
17 revised environmental monitoring plan which is  
18 really the key plan in evaluating what the  
19 impacts are going to be during that crossing in  
20 monitoring the suspended sediments and also some  
21 of the chemical constituents, that plan shows a  
22 mixing zone that mimics the sediment  
23 distribution for the 7-hour crossing. So it  
24 doesn't consider at all a longer crossing time.

1           There's another factor in here, too, that  
2           came about through the testimony, the recent  
3           testimony, was that the crossing time won't be  
4           continuous. They'll have to stop to reset  
5           anchors along the way and pull the, basically  
6           pull the barge across. So that also according  
7           to testimony of Mr. Swanson was not considered  
8           in the model.

9           So it's my understanding that the new  
10          Environmental Monitoring Plan is being put  
11          together right now for submission to the DES.  
12          But where the old plan relied fully on the  
13          7-hour --

14          MR. PATCH: Madam Chair, I'm sorry to  
15          interrupt, but I think some people in the back  
16          are having a hard time hearing, and they would  
17          ask if the witness could either speak up or get  
18          closer to the microphone. Thank you.

19          A       (Dacey) Sure. The issue is that the conditions  
20          that will actually occur as described by the  
21          Construction Panel with a stopping period and  
22          possibly even an overnight during the crossing,  
23          these conditions weren't modeled. So my concern  
24          would be how are they going to create that new

1 mixing zone and how will they accurately place  
2 the monitors for that mixing zone to accurately  
3 document conditions as the crossing occurs.

4 Q Thank you. You testified earlier that you're  
5 familiar with the February Final Decision and  
6 recommendations issued by the Department of  
7 Environmental Resources and DES's subsequent  
8 August 2018 recommendations. Are you familiar  
9 with the varying recommendations related to a  
10 jet plow trial run as contained in those two  
11 documents?

12 A (Dacey) Yes.

13 Q And DES's Final Decision in February 2018 was  
14 accompanied by recommendations that the jet plow  
15 trial run be done 90 days in advance and that  
16 the Site Evaluation Committee be provided the  
17 resulting data from that trial run. Is that  
18 correct?

19 A (Dacey) That's my understanding.

20 Q And how has that changed in DES's subsequent  
21 recommendations in August this year?

22 A (Dacey) It's my understanding that they've  
23 agreed to allow the trial run to occur 21 days  
24 prior to the final cable laying, and within that

1 21-day period, they'll have 7 days to submit a  
2 report to the DES. It will include a summary of  
3 any of the data and any revisions to the  
4 Environmental Monitoring Plan might come about  
5 from that.

6 Q And that subsequent recommendation, August 2018  
7 recommendation, doesn't provide the opportunity  
8 for Site Evaluation Committee review of that  
9 data or for that data to be considered in the  
10 SEC's decision making process, does it?

11 A (Dacey) It appears that it does not.

12 Q Do you believe that the jet plow trial run will  
13 generate data that will be useful to this  
14 Committee in its decision making?

15 A (Dacey) Well, this group has submitted lots of  
16 information regarding our reservations about the  
17 modeling that was done so I think that that  
18 trial run is essential to, without addressing  
19 some of our concerns, the trial run, the data  
20 that will be collected during the trial run is  
21 critical to evaluating what the actual impacts  
22 would be during the final cable laying.

23 Q And would you agree that the Site Evaluation  
24 Committee as the final decision maker on this

1 Project ought to have that data available to it  
2 for its consideration?

3 A (Dacey) Absolutely.

4 Q Thank you. I have no further questions.

5 PRESIDING OFFICER WEATHERSBY: Thank you.  
6 Attorney Brown for Durham Residents.

7 **CROSS-EXAMINATION**

8 **BY MS. BROWN:**

9 Q My name is Marcia Brown. I'm an attorney  
10 representing Donna Heald. Because all of the  
11 Durham Residents have been lumped together and  
12 Ms. Heald is one of them, I am also the  
13 spokesperson for the Durham Residents and some  
14 of the riparian owners in that Durham Residents  
15 group have some questions, and I'm going to ask  
16 Mr. Jones just a few questions first.

17 Mr. Jones, is it correct that you consider  
18 yourself or actually let me rephrase that. Do  
19 you consider yourself an expert on water quality  
20 in Great Bay and Little Bay?

21 A (Jones) Yes. I have 31 years' experience in  
22 doing research and monitoring of that.

23 Q And when did you first hear about this Project?

24 A (Jones) Oh, let's see. I think it was like

1 maybe July of 2016 or something. Vivian Miller  
2 ran into me and said did you hear about this,  
3 and I said I hadn't heard anything about it. So  
4 I think it was two years ago.

5 Q Has the Applicant ever contacted you about this  
6 Project?

7 A (Jones) No.

8 Q We understand that you have a listing of  
9 publications attached to your testimony which is  
10 Durham UNH Exhibit 2. Does that include all of  
11 your published works on water quality of Great  
12 and Little Bay?

13 A (Jones) Not exactly sure what list. I come up  
14 with a lot of lists for different purposes.  
15 Oftentimes, I just list peer-reviewed scientific  
16 publications that I have and not always every  
17 report that I've put out. So in terms of  
18 publishing, probably the list would be  
19 exhaustive, and I don't think I've maintained  
20 that list very well.

21 Q Is that list of your publications available  
22 anywhere to the public?

23 A (Jones) My CV is probably online somewhere,  
24 either attached to my website at the University

1 of New Hampshire or somewhere.

2 Q General question to the Panel.

3 Do you have an opinion as to on whether jet  
4 plowing could be safely used for this Project?

5 A (Jones) Can you repeat that?

6 Q Do the panel members have an opinion on whether  
7 jet plowing could be used for the Project in a  
8 manner that is acceptable to you all?

9 A (Dacey) That's a possibility.

10 Q And how so?

11 A (Dacey) I guess at this point we just don't  
12 know. We had expressed some concerns about the  
13 modeling that was done. Joe Fameley is  
14 expressing concerns about the testing that was  
15 done, and these concerns we don't feel were  
16 fully addressed. So it remains to be seen.

17 A (Jones) I guess I would pipe in to say that I  
18 don't, given the cumulative impacts of jet  
19 plowing, that would, I don't see it as an useful  
20 way of achieving what they're trying to achieve.  
21 There are alternative routes, and jet plowing  
22 seems to be the most invasive approach.

23 Q When you say alternative routes, are you  
24 referring to the alternate routes that have been

1 discussed at this hearing?

2 A (Jones) I'm not familiar with all the testimony.  
3 There initially were three routes that were  
4 potential, and the one plowing through the  
5 sediments of Little Bay was just one of three.

6 Q And who was the source of that information for  
7 those three routes?

8 A (Jones) I don't know. I believe it was  
9 Eversource. I don't have all that.

10 Q Okay. Fair enough. In your Exhibit 3, TD-UNH  
11 Exhibit 3, on page 7 you had discussed that  
12 there were some incomplete, there was incomplete  
13 information about the concrete mattress design,  
14 and so the question is how did any of the  
15 incomplete or inconsistencies in the concrete  
16 mattress design impact your analysis on how the  
17 concrete mattresses impact Little Bay? This is  
18 a general question for the Panel.

19 If you're looking at your testimony, I was  
20 looking at Exhibit 3, page 7, lines 28 through  
21 33.

22 A (Famely) I believe that refers to the, there was  
23 sort of a disconnect in some of the documents  
24 that we reviewed about the design of the

1 concrete mattresses, and whether or not they had  
2 a, I think the term that was used in some of the  
3 descriptions was a honeycomb configuration which  
4 may or may not allow additional sediments to  
5 settle on top of it or allow the concrete  
6 mattress to settle into the sediment bed. So  
7 without that information, we couldn't really  
8 determine whether or not there would be some  
9 recolonization of that area or whether or not it  
10 would be a permanent hard substrate.

11 Q Let me get at this one last question. Do you  
12 have sufficient information then to fully assess  
13 the impacts of the concrete mattresses to Little  
14 Bay?

15 A (Famely) Based on our last review documented in  
16 this testimony, no. I am not aware of other  
17 discussions that have or descriptions in the  
18 docket that have come out since then.

19 Q Okay. Thank you, and that's the end of the  
20 questions. Thank you very much.

21 PRESIDING OFFICER WEATHERSBY: Attorney  
22 Aslin?

23 MR. ASLIN: Thank you, Madam Chair.

24 **CROSS-EXAMINATION**

1 **BY MR. ASLIN:**

2 Q Good morning. My name is Chris Aslin. We've  
3 met before, but I'm acting as Counsel for the  
4 Public in these proceedings.

5 I want to start with a few questions about  
6 your concerns with regard to contaminants that  
7 may be released into Little Bay due to jet  
8 plowing, and I understand from your testimony,  
9 in your initial testimony, which is TD-UNH 2 at  
10 page 7, you raised the concern of potential  
11 contaminants being distributed into the water  
12 column and desorbed from sediments.

13 At this point, there's been some additional  
14 information brought into the docket since your  
15 initial testimony. At this point based on the  
16 record, what contaminants remain a concern to  
17 you?

18 A (Famely) I think that's a little tough to say  
19 still at this point because some of the water  
20 quality calculations done using the mass balance  
21 model were based on two different types of  
22 samples. So the original sediment cores that  
23 were collected, I think, for the 2016 sediment  
24 characterization report were zero to four-foot

1 composites. And the 2017 cores that were  
2 collected for that sediment characterization  
3 update were zero to 2 feet, zero to 2-foot  
4 cores.

5 Those 2017 two-foot cores were not tested  
6 for all contaminants that were tested in the  
7 first round. So we don't really know, and we've  
8 had discussions after the first round of  
9 sediment characterization to arrive at an  
10 estimate of the fraction of the jet plow depth  
11 that would be suspended into the water column  
12 and sort of a back-of-the-envelope calculation  
13 arrived at that two-foot interval.

14 So there are contaminants that are measured  
15 and used in the water quality calculation,  
16 copper being one of them, that was only measured  
17 on the four-foot core. So at this point I  
18 wouldn't know.

19 A (Jones) I could add to that.

20 Q Sure.

21 A (Jones) We do know from years of sampling and  
22 analysis of sediments in Great Bay that about 50  
23 percent of the sediments have elevated arsenic  
24 and elevated mercury levels. If you look at the

1 data from the EPA National Coastal Conditions  
2 Assessment Program, this looks at the levels in  
3 the top two centimeters sediment. So there are  
4 contaminants in the estuary that are resuspended  
5 and moved around, and so in particular, mercury  
6 and arsenic of concern.

7 We also know from annual for decades of  
8 collecting and analyzing blue muscle tissue as  
9 well as oyster and soft-shell clam tissue that  
10 there is an array of contaminants that  
11 accumulate in shellfish. And the reason I bring  
12 this up is that because shellfish are filter  
13 feeders, the source of this contamination is  
14 either in the water column or resuspended  
15 sediments. And so we know that they're  
16 contaminated. There are elevated levels of  
17 mercury and elevated levels of all trace metals  
18 and toxic organic compounds as well.

19 So we have a large database that shows that  
20 Great Bay does have some levels that are  
21 elevated. They're not above health limits  
22 because in that case you couldn't harvest  
23 shellfish. In fact, they are in some areas of  
24 the estuary but not in that area.

1           So in any case, we do have concerns that  
2           there are contaminants in the estuary that are  
3           moving around, that are present in the sediments  
4           and there can potentially not only get into the  
5           water but get into shellfish tissue.

6       Q     Okay. Thank you. Were those contaminants you  
7           mentioned, mercury and other toxic organics,  
8           were those things that were tested for in the  
9           Applicant in their sampling regime?

10      A     (Jones) To some extent. And when you compare  
11           data from one laboratory to another there are  
12           there are variations in their detection limits,  
13           and so sometimes if a detection limit is really  
14           high, they won't even detect it whereas a more  
15           robust analysis could detect something that  
16           another analysis didn't detect.

17      Q     Okay. So some of these contaminants were tested  
18           for, but do you recall whether there were  
19           elevated levels found in the testing done by the  
20           Application on any of those contaminants?

21      A     (Jones) There were. I think Joe is looking  
22           through that data now. To the extent that you  
23           take a four-foot depth of sediment where most of  
24           the contaminants on are the top, you mix it all

1 together, you composite four feet of sediment  
2 and you analyze that, that tends to dilute out  
3 any signal that you're going to get from the  
4 more contaminated surface areas that would be  
5 mostly the ones that would be, the sediment that  
6 would be the greater extent dispersed in the  
7 water column.

8 A (Fameley) From what I recall, the testing of  
9 those four-foot cores showed concentrations of  
10 arsenic that were above the ER-L which is the  
11 screening benchmark established by NOAA. In the  
12 subsequent testing of the two-foot cores, there  
13 was analysis of arsenic and lead and I think a  
14 subset of organic compounds. Some of those  
15 organic compounds were detected and some were  
16 not, and I'm not seeing the ER-L comparison in  
17 front of me.

18 So it looks like pesticides were not  
19 detected generally. PCBs were detected, six of  
20 the original stations were reoccupied for that  
21 two-foot testing, and it appears that those were  
22 below the ER-L for total PCBs. I believe the  
23 same is true for PAHs. Some concentration of  
24 arsenics were above the ER-L. But none of the

1 other metals were measured, as I mentioned, in  
2 the two foot-composite and not all of the  
3 stations were occupied for all. So some of the  
4 contaminants were analyzed but not all so  
5 there's some incomplete information.

6 A (Jones) May I add, this ER-L level is an  
7 assessment of potential toxicity of these levels  
8 and organic compounds to organisms in the  
9 ecosystem. Being below ER-L doesn't mean that  
10 there isn't any toxicity. It just means with  
11 all the tests that they looked at that it's a  
12 lower probability in toxicity, but it's not a  
13 zero amount of toxicity.

14 MR. IACOPINO: Mr. Famely? You told us  
15 about PCBs and about PHs?

16 A (Famely) PAHs. Polycyclic aromatic  
17 hydrocarbons. They're a byproduct of  
18 combustion.

19 A (Jones) Oil spills. Combustion.

20 PRESIDING OFFICER WEATHERSBY: Mr. Famely,  
21 could you identify the document that you're  
22 looking at that has those results?

23 A (Famely) I'm looking at the Supplement to  
24 Characterization of Sediment Quality along

1 Little Bay Crossing. It's dated June 30th,  
2 2017. It's a Normandeau report.

3 A (Dacey) Exhibit 105, I believe.

4 PRESIDING OFFICER WEATHERSBY: Exhibit 105?  
5 Thank you.

6 Q Thank you. So I guess what I'm trying to  
7 understand is, well, let me try it this way. I  
8 think I'm understanding you to say that one of  
9 your concerns is that you feel there's  
10 incomplete data to assess the likelihood of  
11 contaminants being found in the sediments that  
12 are going to be disturbed, and then perhaps a  
13 second concern is that there are some specifics,  
14 contaminants that have levels that are at above  
15 the ER-L? Is that an appropriate summary of  
16 your position?

17 A (Fameley) It's close. There's, so one of the  
18 concerns right now is copper based on the water  
19 quality modeling that was done. So based on the  
20 results, the total suspended solids predicted by  
21 the model, and there's a whole other set of  
22 assumptions in that prediction so there's some  
23 uncertainty there. Based on those predicted  
24 concentrations, there was a calculated potential

1 for water quality violation for copper based on  
2 the available data which is, again, is a  
3 four-foot core. So there was a possibility of  
4 copper exceeding the water quality criteria.

5 Q Okay. With regard to the copper concern, do I  
6 understand it correctly that the concern is that  
7 the level of copper in the sediment is such that  
8 it could be suspended into the water, and it  
9 could be dissolved into the water column or in  
10 what way does it leave the sediments and become  
11 an issue.

12 A (Famely) So the sediments when they're embedded  
13 on the bottom are sort of in this equilibrium  
14 state with the overlying water and the  
15 interstitial water to some depth. When those  
16 sediments and deeper sediments get disturbed and  
17 released and distributed to the water column,  
18 there is potential for some of the contaminants  
19 that are absorbed or adhered to the fine  
20 particles to come out of equilibrium and  
21 partition to dissolve into the water, and it's  
22 sort of based on dettractive forces between the  
23 particle and the chemical.

24 Q Okay. And is that something that the ER-L

1 assessment looks at or is it a separate  
2 question?

3 A (Famely) No. The ER-L is focused on benthic,  
4 toxicity to the benthic community.

5 Q Okay. When copper, let's use that as an  
6 example, when copper is introduced into the  
7 water column, how long does it persist before it  
8 settles back out into the sediments?

9 A (Famely) I don't know exactly.

10 Q Is there any assessment of that in the record to  
11 your knowledge?

12 A (Famely) How long it takes to settle out? Not  
13 that I'm aware of.

14 Q Okay.

15 A (Jones) It hasn't been assessed as part of this  
16 whole proceedings.

17 A (Famely) There's been a theoretical calculation  
18 of partitioning which assumes conservatively  
19 that all of that copper on the sediments goes  
20 into the water column.

21 Q Okay. And presumably, it doesn't stay there  
22 forever though. It would at some point settle  
23 out or find another home?

24 A (Famely) Or dissolve, yes. I mean dilute,

1           sorry.

2           A     (Jones) It can be transported around. It can  
3           reassociate with particles. Particles have  
4           weight, and they can settle out. So there's a  
5           potential for that, but there's also an  
6           equilibrium between the particle surface and the  
7           water column.

8           Q     Okay. And does that same basic concept apply to  
9           arsenic which I think is the other contaminant  
10          that has been identified above or at its ER-L?

11          A     (Famely) Yes.

12          Q     Dr. Jones, you mentioned mercury. Do I  
13          understand correctly that you have a concern  
14          about mercury because it's typically located in  
15          the top portion of the sediments but that the  
16          testing here didn't show elevated levels of  
17          mercury?

18          A     (Jones) Well, my concern is that mercury is  
19          prevalent in this estuary. Its source is  
20          atmospheric deposition. It falls on the whole  
21          watershed. It finds its way to the estuary. It  
22          doesn't go away. There's mechanisms where it  
23          can go away, but it doesn't go away from  
24          sediments so it accumulates and is present in

1 this estuary at elevated levels.

2 Q And if it's associated with sediments in Little  
3 Bay and it's disturbed, will it become more  
4 bioavailable or will it settle out with the  
5 sediments at some point?

6 A (Jones) In sediments it tends to be less  
7 available than it is when it's in the water  
8 column and dispersed. There's conditions in  
9 deep sediments where there's no oxygen where its  
10 availability is pretty small, and it becomes  
11 more available in the upper portions of the  
12 sediment column and in the water column.

13 Q Okay. Thank you. Another, you had some  
14 testimony earlier this morning about pathogens,  
15 whether these are bacteria or microbes and the  
16 possibility of those being stirred up by the jet  
17 plowing as well. With regard to pathogens, what  
18 sort of time scale are we talking about before  
19 those would settle back down into the sediments?

20 A (Jones) Well, it's the same kind of thing.  
21 They're very small microorganisms. You need a  
22 microscope to see them so they're tiny. So they  
23 don't have much weight so they're not going to  
24 on their own settle out very well. If they

1 associate with particles, they will settle out  
2 faster, but they can be transported almost as  
3 dissolved particles. So their fate for the most  
4 part can be, if they're suspended in the water,  
5 they can move around. Eventually they do settle  
6 out. That's why they're present in the  
7 sediments.

8 Q So after some amount of time, whatever elevated  
9 level of pathogens that might be caused by this  
10 Project would settle back out, but we're not  
11 certain what that time frame is?

12 A (Jones) Right.

13 Q Okay. Thank you.

14 A (Jones) We need an accurate model to look at  
15 that.

16 Q You also had some testimony this morning about  
17 concerns with sediment suspension with regard to  
18 eelgrass. Am I correct that with regard to the  
19 concern for eelgrass it has to do with opacity  
20 of the water column, and I think you testified  
21 about that earlier that it was the amount of  
22 light that could get through the water to  
23 support eelgrass; is that correct?

24 A (Jones) That's part of it. Certainly light

1 penetration through the water column to these  
2 aquatic vegetation can be definitely impaired by  
3 suspended sediments. That's a major factor.  
4 Phytoplankton I mentioned earlier but suspended  
5 sediments and colored organic matter tend to  
6 decrease the availability of light penetration.

7 Q So with regard to eelgrass, am I correct that to  
8 have an impact on the eelgrass you would need  
9 elevated levels of suspended sediments for more  
10 than a brief period of time?

11 A (Jones) We know that sediments impair light  
12 penetration. I don't know the time extent.  
13 Obviously, any stress to a plant is stress. So  
14 how long of a time period you need the stress to  
15 have some measurable impact, I'm not sure.

16 Q Because there's been testimony in this  
17 proceeding from the Applicant's witnesses that  
18 the sediment, suspended sediments will settle  
19 out fairly quickly. And so I believe, I believe  
20 their testimony is that it's on the order of a  
21 few hours, and I'm wondering if that was a  
22 sufficient amount of time to have an impact on  
23 the eelgrass.

24 A (Jones) Well, I guess something that was

1 resuspended by jet plowing and then settles out  
2 can be resuspended again. You're putting, I  
3 don't know the long-term fate of anything that  
4 settles out and then gets resuspended. I mean,  
5 there's, now that it's on the surface of the  
6 sediment, it's not settled in, it could be  
7 resuspended again. So I'm not sure what the  
8 long-term fate of the jet plowed sediments would  
9 be.

10 A (Shultz) I would just add when they did take a  
11 look at the potential resuspension of the  
12 sediments, it took, I believe it was three days  
13 for those sediments to fall out of suspension so  
14 not hours. We're talking about, rather, days.

15 A (Jones) Yeah, but you go by a weight basis,  
16 sediments are made up of an array of particle  
17 sizes. Some of them are larger and weigh more  
18 per particle. Some of them are extremely small.  
19 Clays are tiny. They're on the order of and  
20 even smaller than microorganisms. So the  
21 smaller the particle, the longer it takes for  
22 the sediment to settle out. So if you do it on  
23 a weight basis, you may still have very fine  
24 particles suspended for longer time periods that

1 do impair light penetration.

2 Q Okay.

3 A (Jones) So if you do it on the weight basis,  
4 maybe all the sand settles out, the weighty  
5 parts, but you still have these fine particles  
6 suspended in the water column.

7 Q Okay. So setting aside how long the particles  
8 may actually last, am I hearing you correctly  
9 that there's no threshold that you are aware of  
10 for a time threshold in which suspended  
11 sediments would have an impact on eelgrass or  
12 below which there would be no impact.

13 A (Jones) I'm not aware of one.

14 Q Okay. Thank you. We also had some testimony  
15 earlier about the input of sediments from the  
16 watershed on the rivers and tributaries, and I  
17 believe the number was around a thousand cubic  
18 yards per year per square miles. Did I get that  
19 correct?

20 A (Jones) You can ask Attorney Irwin. I think --  
21 you guys want to respond to that?

22 Q Well, perhaps we don't need to be precise.

23 A (Jones) A thousand cubic yards -- excuse me, Mr.  
24 Aslin. A thousand cubic yards I think was what

1 was suspended by the jet plowing.

2 Q Perhaps I'm confusing it. That's right. I  
3 think you're right. I think it was 9 tons was  
4 the number perhaps for the annual --

5 A (Jones) Nine tons per square mile.

6 Q So going back to the 1000 square, or cubic  
7 yards, rather, you had some testimony about how  
8 that compared to the inputs. How does that  
9 compare to the suspension of sediments that  
10 might occur during a large storm event if you  
11 know? Or if any of you know?

12 A (Jones) We do know that during large storm  
13 events that the currents, that there's more  
14 turbulence in the water and the sediments are  
15 stirred up. I don't know that we know any  
16 number.

17 Q No one else seems to know that? All right.  
18 Thank you.

19 I want to look at nitrogen a little bit in  
20 more depth, and you have attached to your  
21 Supplemental Testimony which is TD-UNH Exhibit 3  
22 you had a spreadsheet which I think, yes, it was  
23 Appendix C of that testimony, and it starts at  
24 electronic page 101. The actual calculations

1 are on page 102. I wanted to make sure I  
2 understood the numbers or the calculation that  
3 you're performing and the different -- you have  
4 three different scenarios; is that correct?

5 A (Jones) Yes.

6 Q And the first scenario, well, if I understand  
7 correctly, the first two scenarios are derived  
8 from pore water concentrations of nitrogen at  
9 different depths; is that correct?

10 A (Jones) Yes. Based on a peer reviewed  
11 scientific paper done on sediments in Great Bay  
12 Estuary.

13 Q So these first two scenarios calculate, if I  
14 understand it correctly, the amount of nitrogen  
15 that could be released from the jet plowing.  
16 Actually, this first page is hand jetting and I  
17 think the second page has the, I guess it's the  
18 third page has the jet plowing numbers; is that  
19 right?

20 (Famely) We're looking at a spreadsheet.

21 Q Yes. The document that's in the record is a  
22 little harder to look at just because of the way  
23 it prints, I guess.

24 A (Famely) Yes.

1 Q Let's put it this way. You have calculated the  
2 nitrogen release from pore water for both the  
3 jet plowing and the hand jetting separately. Is  
4 that right?

5 A (Famely) Yes.

6 Q Okay. And the assumptions that are used is the  
7 amount of sediment that's going to be disturbed,  
8 is this sort of the key factor that goes into  
9 that?

10 A (Famely) Yes.

11 Q And then based on the peer reviewed study that  
12 Dr. Jones was just mentioning, you have a figure  
13 for how much nitrogen is contained in the pore  
14 water within this sediment?

15 A (Famely) Yes. I believe that's correct.

16 Q And so my first question was Scenario 1 says at  
17 the top zero to 3 millimeters of pore water  
18 concentration. Is that a depth measure or is  
19 that some other measure of pore water?

20 A (Jones) That's a depth.

21 Q Okay. So that's looking at only the top three  
22 millimeters of sediments?

23 A (Famely) Pore water associated with that.

24 Q Okay. And then the second scenario goes to nine

1 millimeters? Still very small.

2 A (Jones) Yes. I'm not sure that that's 9 -- that  
3 might be a typo. Have to look at the -- might  
4 be 9 centimeters.

5 Q Okay. Because that was my question. Seems like  
6 we're talking, if we're talking millimeters,  
7 we're talking about very small amount of the top  
8 layer of sediments.

9 A (Jones) Yeah, they reported top nine  
10 centimeters. That's a typo.

11 Q Okay, but even with centimeters we're still  
12 talking about a fairly small layer of sediments  
13 at the top of the column?

14 A (Jones) Right.

15 Q Okay.

16 A (Jones) Small depth, right.

17 Q Is there difference in nitrogen, well, let me  
18 back up.

19 Is there a reason not to look below nine  
20 millimeters?

21 A (Jones) Their paper had various sites that they  
22 looked at, and they went to a variety of depths,  
23 and they did include going down to 20  
24 centimeters in some. So the data, when you look

1 at the graphs where they portray the data that  
2 they measured, it appears that the nitrogen  
3 concentrations continue to increase the deeper  
4 they go. So these are just different scenarios  
5 based on their graphs in four different areas.

6 So I think you're getting at the question  
7 below nine centimeters, nine millimeters and  
8 three millimeters, what's the nitrogen  
9 concentration, and from their graphs they  
10 continue to measure the deeper they go the  
11 higher the nitrogen concentration.

12 Q Is that a linear relationship based on just the  
13 quantity of sediment or is it --

14 A (Jones) No. It's at the different depths so  
15 they're measuring pore water concentrations at  
16 different depths. And so it's, it continues to  
17 increase in somewhat of a linear fashion.

18 Q Okay. So from Scenario 1 and 2, you're looking  
19 at the total amount of sediment that's going to  
20 be suspended or is assumed to be suspended, and  
21 then using different factors for the amount of  
22 nitrogen that might be in the pore water to  
23 calculate possible outcomes?

24 A (Famely) Correct.

1 Q Okay. And then the third scenario is a  
2 different approach, if I understand it, that you  
3 used data on total Kjeldahl nitrogen levels from  
4 Normandeau's study; is that correct?

5 A (Famely) I think the average of the total  
6 nitrogen in all of the cores and then  
7 considering the volume that would be disturbed  
8 at whatever the depth of disturbance was at the  
9 time of this calculation. I can't recall if it  
10 was the 8 feet or five feet, but we calculated a  
11 cross-section of the volume and associated that  
12 with the bulk density.

13 Q Okay. And so this is based on the actual  
14 sediment cores that were taken for this Project.

15 A (Famely) Correct.

16 Q And it's a measure of total nitrogen that was  
17 contained in that sediment?

18 A (Famely) It's an average of the total nitrogen  
19 measured in those samples.

20 Q Okay. Thank you. Am I correct that total  
21 nitrogen includes nitrogen that's not in a  
22 soluble form? In other words, do you assume in  
23 this scenario that all, the total amount of  
24 nitrogen is released from the sediments and

1 becomes soluble or is otherwise available in the  
2 water column?

3 A (Jones) Total nitrogen is actually the measure,  
4 one of the measures used by EPA to assess  
5 impacts. In terms of nitrogen loading to the  
6 estuary, that's the total that's given. So I'm  
7 not, I don't really know exactly how they did  
8 the analyses. Sometimes you can separate  
9 sediment and look at the pore water. I'm not  
10 exactly sure what that was.

11 Q Okay. But am I correct that some nitrogen or  
12 that the nitrogen that's being measured here  
13 includes nitrogen that's bound up in some form  
14 within the sediments?

15 A (Jones) Potentially. Yes.

16 Q Do we have any, does this scenario take into any  
17 potential for some of the nitrogen not becoming,  
18 not being released from the sediment particles?

19 A (Jones) What do you mean, take into  
20 consideration? This is a measure of total  
21 nitrogen in the sediments. This is the loading  
22 of nitrogen to the estuary.

23 Q Okay. I guess what I'm trying to understand is  
24 if this measure is going to be equivalent of

1 nitrogen coming in from like a wastewater  
2 treatment facility or is it nitrogen in some  
3 other form that may not be persistent in the  
4 water column or may not be bioavailable in some  
5 ways?

6 A (Jones) Total nitrogen takes into consideration  
7 all of those types of nitrogen. Yes.

8 Q Okay. So would it be fair to say that is sort  
9 of the worst case scenario that all the nitrogen  
10 in the sediment would be released?

11 A (Jones) I suppose so. Yes.

12 Q Upper bounds, I guess. I'm just trying to  
13 understand where we are. Okay.

14 And then similar to the questions I had  
15 about other contaminants, with regard to  
16 nitrogen, is there a time period that it  
17 persists once it's in the system? Does it  
18 settle out with sediments? How long might the  
19 impact of this last in terms of nitrogen?

20 A (Jones) Well, nitrogen is a nutrient, and in the  
21 soluble form it's taken up by plants and it's  
22 also transformed by bacteria. So it can go from  
23 nitrate to nitrite to nitrogen gas, all kinds of  
24 different forms of nitrogen. So it has an, as

1 an atom it has some kind of transport in fate,  
2 but it also is biologically key to all  
3 metabolism so it can be taken up by organisms in  
4 the water column, on the surface of the  
5 sediments, wherever.

6 Q Okay. So if it's taken up by organisms, then it  
7 persists in the system as opposed to settling  
8 back out into the sediments?

9 A (Jones) Or it still persists in the system, yes.

10 Q So earlier you were talking about equilibriums.  
11 Would this be essentially shifting the  
12 equilibrium by stirring up nitrogen that is  
13 already in the sediment?

14 A (Jones) Yes.

15 Q Okay. And is that the concern that you're  
16 adding, I mean, I guess, we're not adding new  
17 nitrogen to the overall system. We're changing  
18 its location and perhaps its form. Is that  
19 correct?

20 A (Jones) It's now available. It's in the water  
21 column. Where it was buried in the sediment and  
22 not available to the ecosystem, now it's  
23 available to the ecosystem, yes.

24 Q Okay.

1 A (Jones) That's now -- spread it around wherever.

2 Q And that's the concern, that it becomes  
3 available.

4 A (Jones) Any nitrogen loading to the Great Bay  
5 Estuary is a concern to all agencies involved in  
6 trying to maintain the health of the estuary.

7 Q I think I understand that, but is there a  
8 difference between nitrogen loading and  
9 resuspension and making the nitrogen that's  
10 already in the system more bioavailable? I  
11 mean, I guess I'm trying to understand, we're  
12 not picking up additional nitrogen into Great  
13 Bay or Little Bay. We're just moving it around  
14 in some way. Making it perhaps more available.  
15 Is that correct?

16 A (Jones) That's one way to look at it.

17 Q Okay. So I'm trying to distinguish or  
18 understand the differences between an input of  
19 nitrogen from a wastewater treatment facility or  
20 other nonpoint sources and what is proposed here  
21 to be.

22 A (Jones) That's one way to look at it.

23 Q Okay. Thank you. I have no further questions.

24 PRESIDING OFFICER WEATHERSBY: Why don't we

1 take a break. Be back at five minutes to 11.

2 (Recess taken 10:36 - 10:56 a.m.)

3 PRESIDING OFFICER WEATHERSBY: We will  
4 resume questioning of this panel. Attorney  
5 Needleman?

6 MR. NEEDLEMAN: Thank you.

7 **CROSS-EXAMINATION**

8 **BY MR. NEEDLEMAN:**

9 Q Good morning, gentlemen. Barry Needleman. I  
10 represent the Applicant in this matter. I think  
11 we've all met before.

12 At the Tech Session I asked each one of you  
13 about your experience with these kinds of  
14 projects, and I think that you all told me that  
15 none of you had experience working on a jet plow  
16 project; is that right?

17 A (All) Yes.

18 Q And I think only one of you had or none of you  
19 also had experience with underwater cable  
20 installation; is that correct?

21 A (All) Correct.

22 Q And one of you, I think it was you, Mr. Dacey,  
23 had some experience with an HDD Project; is that  
24 right?

1 A (Dacey) Yes. Not under a bay.

2 Q And that project related to a 12-inch diameter  
3 water line; is that right?

4 A (Dacey) Yes. That was in Connecticut.

5 Q Now, throughout all of your testimony, you've  
6 raised a number of environmental concerns  
7 related to Little Bay, and I want to focus on  
8 that, and in particular I want to focus on the  
9 interactions that you've all had with DES in  
10 this case.

11 So I want to start with Applicant's Exhibit  
12 204, and this is a set of notes that was  
13 provided to us in discovery about a February  
14 15th, 2017, meeting with DES, and Dawn, if you  
15 can just go to the top.

16 I assume, Mr. Dacey, you recognize these  
17 notes? I think they're yours.

18 A (Dacey) I do. Yes.

19 Q Okay. And these notes reflect a range of  
20 concerns I think that you all shared with DES on  
21 this date about things like grain size analysis,  
22 2014 versus 2016 data, water quality issues,  
23 cable removal, jet plow questions, et cetera.  
24 Is that a fair, sort of broad characterization?

1 A (Dacey) Except I'm not sure if, these are just  
2 notes, issues jotted down. I'm not sure if  
3 these were shared concerns, but they were  
4 concerns.

5 Q Certainly, though, these notes reflect the  
6 meeting that you personally had with DES on that  
7 date, right?

8 A (Dacey) Correct.

9 Q And these notes also reflect at the top of the  
10 page who was in attendance at that meeting. Is  
11 that correct?

12 A (Dacey) That's correct.

13 Q And the Applicant was not at this meeting nor  
14 was it notified of it; is that right?

15 A (Dacey) I'm not aware of the notification  
16 process, but they were not in attendance.

17 Q The next Exhibit I want to turn to is TD-UNH  
18 Exhibit 2, Attachment E. This is a letter that  
19 the Town of Durham sent to DES on February 28th,  
20 2017. So this is approximately two weeks after  
21 the meeting that we just saw with DES. I assume  
22 you're all familiar with this letter?

23 MR. FITZGERALD: Excuse me. What page is  
24 this?

1 MR. NEEDLEMAN: This is TD-UNH Exhibit 2  
2 Attachment E.

3 MS. GAGNON: PDF 51.

4 MR. NEEDLEMAN: PDF 51.

5 MR. FITZGERALD: Thank you.

6 BY MR. NEEDLEMAN:

7 Q I assume you're all familiar with this letter.

8 A (Dacey) Yes.

9 Q In fact, this letter has attached to it comments  
10 that each of you, I believe, except for  
11 Dr. Jones individually prepared which were then  
12 provided to DES; is that right?

13 A (Dacey) Correct.

14 Q And in total, there's 25 pages of single space  
15 comments attached to this letter from the three  
16 of you that went to DES; is that right?

17 A (Dacey) I'll assume you're correct.

18 Q Now I want to turn to TD-UNH Exhibit 2. This is  
19 the cover letter that was attached to your July  
20 24th, 2017, Prefiled Testimony. And if we note  
21 at the bottom of that cover letter who was  
22 cc'd -- Dawn, if you could blow that up? DES  
23 was copied on your initial Prefiled Testimony.  
24 Do you see that?

1 A (Dacey) Yes.

2 Q So at this point in time, DES would have had  
3 access to all of the concerns that you raise in  
4 your Prefiled Testimony, correct?

5 A (Dacey) Our concerns at that time, yes.

6 Q Now, on October 30th, 2017, you had another  
7 meeting with DES. Do you recall that?

8 A (Dacey) I do.

9 Q And I'm going to bring up Applicant's Exhibit  
10 205. That's the sign-in sheet from this  
11 meeting, and it shows who was in attendance. Do  
12 you see that?

13 A (Dacey) I do.

14 Q And you were there, Mr. Dacey, correct?

15 A (Dacey) I was.

16 Q And Mr. Famely, you were at that meeting,  
17 correct?

18 A (Famely) Yes.

19 Q And I asked both of you about this at the Tech  
20 Session. In fact, I asked you about both of  
21 these DES meetings, and I think you told me,  
22 Mr. Dacey, that it was your opinion that DES  
23 listened patiently and respectfully to the  
24 concerns that you were raising; is that correct?

1 A (Dacey) I don't recall that specific comment,  
2 but I'll take your word for it.

3 Q Well, let me ask you again then today.

4 Do you believe that at the meetings you had  
5 with DES they listened patiently and  
6 respectfully to the concerns you were raising?

7 A (Dacey) My recollection would be that that would  
8 be the case.

9 Q And at this particular meeting, you discussed  
10 with DES the thoughts that you had about  
11 potential permit conditions for this Project; is  
12 that right?

13 A (Dacey) I don't recall whether it was phrased as  
14 permit conditions, but I think it was still in  
15 regard to concerns that we had. Whether those  
16 were going to be permit conditions or not, I'm  
17 not sure how it was phrased.

18 Q I'm going to come back to that point in a  
19 moment. One more question about this. The  
20 Applicant also was not present at this meeting;  
21 is that right?

22 A (Dacey) Correct.

23 Q So now let's go to Applicant's Exhibit 206.

24 This is a letter to DES from the Town of Durham

1 and UNH also dated October 30th.

2 And if you go to the upper corner, Dawn?  
3 Highlight that?

4 It notes that this letter was hand  
5 delivered. Do you see that?

6 A (Dacey) Yes.

7 Q So this letter would have been delivered to DES  
8 on the same day that you just had the meeting we  
9 were talking about; is that correct?

10 A (Dacey) That appears to be the case.

11 Q And this letter was submitted approximately four  
12 months before DES issued its final permit  
13 conditions, correct?

14 A (Dacey) Correct.

15 Q Dawn, can you go to page 6 of the letter,  
16 please? And in the middle if you could  
17 highlight that?

18 So going back to the question I asked you a  
19 moment ago, if you look at the bottom paragraph  
20 there, this is where in this letter you are  
21 recommending permit prerequisites and conditions  
22 for NHDES consideration. Do you see that?

23 A (Dacey) Right. Correct.

24 Q So fair then to conclude that since this letter

1 was hand delivered on the same day you had this  
2 meeting, and the letter contains a range of  
3 proposed permit conditions, you would have also  
4 discussed those conditions with DES at that  
5 meeting?

6 A (Dacey) That's a reasonable assumption.

7 Q And Dawn, if you zoom back out and look at the  
8 box at the bottom now, this is the first page on  
9 page 6. And in this letter, I'll show it to you  
10 if you want, but do you recall that you broke up  
11 your recommendations into three categories.  
12 This is the first category where you have  
13 proposed permit conditions prior to issuance of  
14 the permit. Does that sound right?

15 A (Dacey) It does.

16 Q And on pages 6 through 8 of this letter, you  
17 made six recommendations, correct?

18 A (Dacey) Under that first category. Yes.

19 Q And then we go to pages 8 and 9. Could you pull  
20 that up, Dawn?

21 And what's the heading of the second  
22 category there? So now you have a range of what  
23 you called Preinstallation Conditions, correct?

24 A (Dacey) Correct.

1 Q And there were five recommendations you made  
2 there, correct?

3 A (Dacey) Correct.

4 Q And then if we go to the bottom of page 9, I  
5 think, or the middle of page 9, this is your  
6 third category, what you call During  
7 Installation, correct?

8 A (Dacey) Correct.

9 Q And you had 12 proposed conditions with  
10 subconditions for some of them, correct?

11 A (Dacey) Correct.

12 Q So as of October 30th, UNH and Durham through  
13 you gentlemen proposed very specific, very  
14 detailed permit recommendations to DES for their  
15 consideration; is that correct?

16 A (Dacey) That is correct.

17 Q Now, during the course of this proceeding and  
18 your interactions with DES, there were occasions  
19 where DES as a result of the information you  
20 brought to their attention actually asked the  
21 Applicants to provide more information to the  
22 agency; is that right?

23 A (Dacey) That sounds correct.

24 Q Let me bring up Applicant's Exhibit 207. This

1 is a letter from DES, I think it's August 4th,  
2 to Ms. Monroe at the Site Evaluation Committee.

3 And if you go to the first paragraph, Dawn?  
4 That main paragraph? Well, okay, it's my  
5 mistake. It's correcting an earlier letter.  
6 But the letter is essentially requesting  
7 additional information from the Applicants. Is  
8 that your understanding?

9 A (Dacey) I can't say with that's the letter, but  
10 I do know that they did.

11 Q That's the one I was thinking of. This is the  
12 August 1st letter, also to Ms. Monroe. And that  
13 letter in the first paragraph talks about DES  
14 continually reviewing information submitted by  
15 the Applicant and interested parties. And you  
16 might be one of those interested parties. Is  
17 that fair to say?

18 A (Dacey) That is.

19 Q And then if we go to page 3 of this letter and  
20 pull up the highlighted paragraph?

21 MR. FITZGERALD: What's the Exhibit Number?

22 MR. NEEDLEMAN: I believe this is 207. Is  
23 that correct, Dawn?

24 MS. GAGNON: Yes.

1 Q So in this paragraph this is DES specifically  
2 saying that it would like more information about  
3 particular surface water quality issues  
4 associated with the submarine cable crossing.  
5 Do you see that?

6 A (Dacey) Yes.

7 Q And then immediately underneath, they reference  
8 your Prefiled Testimony of July 24th, 2017; do  
9 you see that?

10 A (Dacey) I do.

11 Q So plainly, DES was quite focused on your  
12 testimony and quite focused on the issues you  
13 raised for them; is that fair to say?

14 A (Dacey) It is.

15 Q And if you look at the rest of this letter, the  
16 bottom of this page and over to the next page,  
17 highlight that first, Dawn, at the bottom of the  
18 page?

19 They actually go through detailed quotes by  
20 page and line number of your testimony where  
21 they are pointing the Applicant to those  
22 sections and asking the Applicant to provide  
23 more information to them based on the issues  
24 that you raised; is that right?

1 A (Dacey) Yes.

2 Q And Dawn, if we go over to the next page it  
3 continues to the top of the next page as well.

4 So again, you'd agree with me that DES  
5 undoubtedly read the testimony and took your  
6 concerns very seriously in what you raised; is  
7 that right?

8 A (Dacey) I'd agree with that.

9 Q So now after this entire course of dealing, DES  
10 issued its permit conditions in February of  
11 2018; is that right?

12 A (Dacey) Correct.

13 Q And immediately after, well, a month after DES  
14 issued its permit conditions, I believe you,  
15 Mr. Dacey, prepared a chart that compared what  
16 you requested as permit conditions in that  
17 October 30th letter with what DES actually  
18 included in the February permit. Do you recall  
19 that chart?

20 A (Dacey) I do.

21 Q And you didn't just list the two, but you in  
22 that chart described how you interpreted the DES  
23 conditions? In other words, they agreed with  
24 you, they didn't agree with you, they included

1 it, does that sound familiar?

2 A (Dacey) Yes.

3 Q And you provided that chart to us in discovery;  
4 is that right?

5 A (Dacey) I assume so.

6 Q So I want to call up Applicant's Exhibit 208  
7 which is that chart that you created, and it's a  
8 five-page chart that's got a lot of information  
9 in it. I'm just going to call your attention to  
10 a couple of places in here. So again, the chart  
11 at the bottom of it, you can see in the corner  
12 it's dated March 13th, 2018; is that right?

13 A (Dacey) That's correct.

14 Q So you created this about a month after DES  
15 issued its permit, correct?

16 A (Dacey) I believe that was done in Excel  
17 spreadsheet so I'm not sure -- that's when it  
18 was turned into a PDF so I'm not sure of the  
19 exact date.

20 Q Fair enough. So Dawn, let's go back up to the  
21 top of that first page for a minute, and the  
22 reading at the top in that left column is Prior  
23 to Issuance. Do you see that? Let's highlight  
24 the top, Dawn, if we could, please?

1           So the heading of the main column is  
2           Conditions Proposed by Durham and UNH, and then  
3           the subheading is Prior to Issuance; do you see  
4           that?

5           A     (Dacey) Yes.

6           Q     And I think what we'll find when we look at this  
7           chart is that it mirrors that October 30th,  
8           2018, letter in this column; is that right?

9           A     (Dacey) I believe that's how it was constructed,  
10          yes.

11          Q     And on pages 1 and 2 of the chart under the  
12          heading Prior to Issuance, if we go over to, I  
13          think it's the third column on the top, Dawn, if  
14          we can just see the title of that column? It's  
15          Notes, and I think this is where you're  
16          interpreting how DES dealt with the condition in  
17          terms of how you recommended it; is that right?

18          A     (Dacey) Yes.

19          Q     And if we look in this first section, the Prior  
20          to Issuance section, I think we would see  
21          according to your notes that DES generally  
22          adopted three of your recommended conditions.  
23          Does that sound about right?

24          A     (Dacey) In that first section, yes.

1 Q And then the second section which begins on page  
2 2 is what you call Preinstallation, correct?

3 A (Dacey) That's right.

4 Q And you have, I think, five proposed conditions  
5 here and I think according to your notes,  
6 Conditions 4 and 5 were quote, "nearly identical  
7 to what you recommended," correct?

8 A (Dacey) I'll take your word for it.

9 Q And then the other three, according to your  
10 summary, were more or less what you requested.  
11 Sound about right?

12 A (Dacey) I can't see it.

13 A (Jones) Scroll over to the right. Thank you.

14 A (Dacey) Correct.

15 Q And then the final category on page 4, again,  
16 your terminology During Installation, and you  
17 had these 12 broad conditions with various  
18 subheadings, sound familiar?

19 A (Dacey) It does.

20 Q And according to your chart, DES adopted, I  
21 think, six of the 12 recommended conditions,  
22 does that sound right?

23 A (Dacey) Seems about right in part or in whole.  
24 Looks like there's some portions that were.

1 Q And in fact, in some cases like number 6, 7 and  
2 8, they didn't adopt your proposed condition,  
3 but I think you noted that they included  
4 elements of what you proposed in their  
5 conditions; is that right?

6 A (Dacey) That sounds correct.

7 Q Now, earlier today when you were first put on  
8 the stand, Mr. Patch asked you about whether you  
9 had an opportunity to compare the prior permit  
10 to what DES did in its August letter. Do you  
11 recall that?

12 A (Dacey) I do.

13 Q And you said, I think, Mr. Dacey, quote, "There  
14 was not a lot of new information," right? Just  
15 some monitoring provisions were delayed. Is  
16 that correct?

17 A (Dacey) Correct. I think that the point I was  
18 making is that a lot of the information is  
19 deferred.

20 Q So you would agree with me then that with  
21 respect to this chart there are really no  
22 material changes in terms of how DES adopted  
23 recommendations that you made?

24 A (Dacey) It really turns into a timing issue

1 where a lot of these things we don't know what  
2 the final resolution will be.

3 Q Now, also as part of some of that earlier  
4 discussion, and I don't remember who asked it,  
5 but Mr. Famely, you were asked a question where  
6 you responded that there were still some  
7 uncertainties and you made reference to  
8 elutriate testing. Do I have that right?

9 A (Famely) Yes.

10 Q I think your point was that if elutriate testing  
11 was used, it would help to reduce some of what  
12 you believe to be these uncertainties, correct?

13 A Yes.

14 Q So I want to look at this chart, Dawn, on page  
15 2, number 5.

16 If I've got this one right, there was  
17 actually, yeah. You actually, as one of the  
18 permit conditions that you originally  
19 recommended, you asked DES for this elutriate  
20 testing; is that right?

21 A (Famely) That looks right.

22 Q So when you raised that earlier today, this  
23 isn't a new issue. In fact, it's an issue  
24 that's been in this case for a long time; is

1           that correct?

2           A     (Famely) Yes.

3           Q     And if we go over, Dawn.  According to Mr. Dacey  
4           in his analysis, he said that DES didn't  
5           incorporate this condition, right?

6           A     (Famely) Yes.

7           Q     So earlier today when you were indicating that  
8           you thought it would be helpful for this  
9           condition to be included to reduce  
10          uncertainties, isn't it fair to say that DES  
11          already evaluated this and didn't agree with  
12          you?

13          A     (Famely) I can't really speak to what DES  
14          thought.  I see remaining concerns with the  
15          calculations that have been made in terms of  
16          water quality, and this is the most certain way  
17          to resolve those uncertainties.

18          Q     Well, certainly DES evaluated your proposed  
19          condition and chose not to include it in the  
20          permit; is that correct?

21          A     (Famely) I suppose that's possible.

22          A     (Dacey) I just want to add that they may have  
23          not issued, they may not have addressed it  
24          directly, but their recommendation to look at

1 horizontal drilling and also the recommendation  
2 to do a trial run kind of, it's another way of  
3 addressing a similar concern.

4 Q So in fact, even though they didn't adopt the  
5 precise language that you recommended through  
6 other aspects of this they've tried to get at  
7 the concern; is that your testimony?

8 A (Dacey) I'm saying they may not have addressed  
9 it directly, but yes, they could have been  
10 addressed by the other comments made by DES.

11 Q Okay. So Mr. Dacey, and anyone else that wants  
12 to answer this, you'd agree with me based on  
13 everything we've just gone through that this  
14 record clearly shows that Durham and UNH had a  
15 full and fair opportunity to make all of their  
16 environmental concerns known to DES; is that  
17 correct?

18 A (Dacey) I think that's pretty broad. I mean, we  
19 had, we certainly early on, in particular, we  
20 had opportunity and made opportunities to go in  
21 and express our concerns. As far as later on,  
22 the negotiations that are going on right now,  
23 for example, which are critical, we are not  
24 involved in that process.

1 Q You'd agree with me also that DES took the  
2 concerns that you raised with them very  
3 seriously, right?

4 A (Dacey) Yes. I'd say they did a good job.

5 Q I mean, in fact, this record shows that not only  
6 did they take them seriously, they actually took  
7 a lot of the conditions that you proposed and  
8 they put them into the permits; is that right?

9 A (Dacey) They did, but one issue we have is that  
10 we still aren't sure if they're actually going  
11 to be incorporated into some of the monitoring  
12 plans that are critical to the whole evaluation.

13 Q Well, Mr. Dacey, you've had a lot of experience  
14 working with DES, haven't you?

15 A (Dacey) I have.

16 Q And is it fair to say that you're confident in  
17 DES's ability to implement permits that they  
18 issue?

19 A (Dacey) In general, yes.

20 Q So to the extent that DES has imposed permit  
21 conditions here that require the submission of  
22 additional documents which they will review,  
23 would you agree with me that we can be confident  
24 DES is going to do a good job reviewing those

1 documents?

2 A (Dacey) I know DES has a lot on their plate and  
3 there's a lot of information in this docket and  
4 there's a lot of detail. So I think, I do have  
5 concerns about this, finalizing some of these  
6 plans and incorporating some of the new  
7 information. For example, crossing time, and  
8 how that affects some of the permit conditions.  
9 So I still have some concerns about them fully  
10 addressing concerns.

11 Q Well, I don't think you answered my question so  
12 let me try again.

13 You mention that there's a lot of  
14 information here, a lot of complexity.  
15 Certainly DES has a lot of experience  
16 implementing permits that contain a lot of  
17 information and complexity, don't they?

18 A (Dacey) For sure.

19 Q And so I'll ask the question again.

20 In light of that, do you have any doubt  
21 that DES can't do a good job implementing this  
22 permit?

23 A (Dacey) I think they'll do a good job with the  
24 information they have available. I'm not sure

1 they're going to be reviewing all of the hearing  
2 testimony.

3 Q Now, in your Prefiled Testimony which is TD-UNH  
4 number 2, looking at the original July 24th,  
5 2017, testimony, and I'm on page 5, lines 1  
6 through 4. I'll give you a minute to get there.

7 At that point, I'm not sure who it was that  
8 said that, but you indicated that as of that  
9 time, concerns still remained with respect to  
10 some of the environmental aspects of this  
11 Project, correct?

12 A (Dacey) Can you give us that reference again?  
13 Page 5?

14 Q Yes, I'm on page 5, lines 1 through 4.

15 A (Dacey) Correct.

16 Q And I asked you about that at the Tech Session,  
17 Mr. Dacey, and I think what you told me is that  
18 up to that point you thought DES had done a good  
19 job addressing the concerns; is that right?

20 A (Dacey) That is likely correct.

21 Q Now, earlier today when CLF was questioning the  
22 panel, Dr. Jones, I think you were asked some  
23 questions and in particular you were asked about  
24 pathogens and shellfish. Do you recall that?

1 A (Jones) Yes.

2 Q And you said that to your knowledge that hadn't  
3 been evaluated. Do you remember saying that?

4 A (Jones) I think what you said was the pathogens  
5 in the sediment had not been evaluated.

6 Pathogens in shellfish in the water, I actually  
7 described that they do a good job of looking at  
8 that.

9 Q And you're aware, of course, that one of the  
10 permit conditions here requires the Applicant to  
11 do baseline tissue testing of shellfish and then  
12 post-project tissue testing of shellfish for  
13 fecal coliform and other contaminants, correct?

14 A (Jones) I'm aware that that's part of the  
15 discussion. I haven't seen the final monitoring  
16 plans so I can't say what will be in the final  
17 monitoring plan.

18 Q And in your Prefiled Testimony, the Original  
19 Testimony from July of 2017, I think on page 12,  
20 line 6, you specifically raised this issue of  
21 pathogens initially. Is that correct?

22 A (Jones) Correct. I suppose. Yes.

23 Q And you raised that issue again on page 5 of the  
24 October 30th, 2017, letter that we saw. Do you

1 recall that?

2 A (Jones) I'll take your word for it.

3 Q And you also raised it again in your  
4 Supplemental Prefiled Testimony that was filed  
5 in July of this year, do you recall that?

6 A (Jones) Raising it is the, again, just to, we're  
7 getting into the details. Raising the issue of  
8 pathogens being mobilized from this project.  
9 Yes.

10 Q Correct.

11 A (Jones) Into the water.

12 Q We're talking about the same thing. Thank you.

13 So on multiple occasions you actually  
14 raised this issue with DES, correct?

15 A (Jones) Possibly through letters from this group  
16 to DES, I would imagine. I haven't talked to  
17 DES about this.

18 Q So to the extent those issues are contained in  
19 those documents that I just recited and to the  
20 extent DES received and reviewed those  
21 documents, they certainly were aware of these  
22 concerns.

23 A (Jones) Yes.

24 Q Okay. And there's no condition that they

1 proposed in the permits that speaks to this  
2 concern that you raise, is there?

3 A (Jones) I'd have to take a look at the document  
4 to review that.

5 Q Are any of you aware of a condition like that?

6 A (Jones) Condition like what? Explain.

7 Q Dealing with your concern that you raised in  
8 those documents about pathogens in the sediment.  
9 Is there a condition about that in the  
10 environmental permit?

11 A (Jones) I don't think there is.

12 Q And in fact, at that chart we looked at before,  
13 and in the October 30th letter where you all  
14 proposed conditions to DES, you didn't even  
15 propose a condition dealing with this issue, did  
16 you?

17 A (Jones) I think it was embedded in one of the  
18 conditions.

19 Q Which one?

20 A (Jones) I would have to go through it, and I  
21 think as you guys were scrolling through all  
22 these documents I think I saw that embedded in  
23 one of the conditions.

24 Q Okay. Well, fair enough. I may have missed it.

1           So if it was embedded in a condition, then  
2           DES would have considered it and would have  
3           dealt with it in some manner, either accepting  
4           your proposal or not accepting your proposal,  
5           correct?

6   A       (Jones) They would have made a decision about it  
7           if they were reading it and interpreting it the  
8           correct way, yes.

9   Q       So certainly there's no doubt that DES had  
10          access to these concerns that you raised and had  
11          an opportunity to consider them and address them  
12          if they chose to; is that right?

13               MR. PATCH:  Objection.  The question's been  
14               asked and answered.

15               MR. NEEDLEMAN:  I don't think it has.

16               MR. PATCH:  I think it has.

17               PRESIDING OFFICER WEATHERSBY:  Overruled.

18   A       (Jones) Say that again?  So state that again.

19   Q       Sure.  So certainly to the extent that all of  
20          these issues were raised in the documents we  
21          just looked at, DES had the opportunity to  
22          consider the concerns you raised about pathogens  
23          in the sediments and to address them if they  
24          chose to, correct?

1 A (Jones) Yes. It depends on what happens in the  
2 monitoring plan and what, how that the  
3 information that comes out of the monitoring is  
4 dealt with and used to change things. So I  
5 don't really know what the condition, the  
6 overall process really, what overall process  
7 will occur.

8 Q Let me switch topics. Sediment modeling is also  
9 a concern to some of you; is that correct? I  
10 think it was you, Mr. Shultz.

11 A (Shultz) Yes, it's been a concern.

12 Q And at the Tech Session, I think I asked you  
13 some questions about this, and I think what you  
14 told me is that if similar modeling had been  
15 conducted in other projects and that was found  
16 to be accurate, it would be a good indication as  
17 to whether the modeling here was also accurate.  
18 Do you remember that discussion?

19 A (Shultz) Yes. I believe you said if you could  
20 show examples of where the model produced  
21 results that fell in line with data measurements  
22 that that would be a good indication of the  
23 model's accuracy.

24 Q And I want to pull up Applicant's Exhibit 209.

1           So this is a Data Request that we asked of  
2           Durham and UNH. And in response to this Data  
3           Request information was provided to us from your  
4           file. Does that sound familiar?

5           A     (Shultz) Yes. It does.

6           Q     And one of the things that was provided to us  
7           from your file was an article that the Committee  
8           saw yesterday which was written by some folks at  
9           ESS dealing with, among other things, these  
10          modeling issues for submarine cable  
11          installations, does that sound familiar?

12          A     (Shultz) Yes, it does.

13          Q     And we discussed this with ESS. It's a jet plow  
14          Project from Bayonne to Brooklyn. You're  
15          familiar with that?

16          A     (Shultz) Familiar with the pamphlet that was  
17          shown.

18          Q     And I'm going to summarize in the interest of  
19          time, but I think essentially what ESS said  
20          yesterday was that the model that was used there  
21          was found to be accurate and conservative. Is  
22          that consistent with your recommendations of the  
23          article?

24          A     (Shultz) That's what it says in the article, but

1           there's no quantification of how accurate the  
2           model was.

3       Q     And the technical subconsultant that was  
4           referred to in the article, do you know who that  
5           consultant was?

6       A     (Shultz) I believe it was RPS.   ASA.

7       Q     Are you aware of the fact that RPS is the same  
8           subconsultant that was used here for the  
9           modeling?

10      A     (Shultz) Yes, I am aware.

11      Q     In fact, I'm not sure, but the record will let  
12           us know that the same person who did the  
13           modeling here, Mr. Swanson, I think also did the  
14           modeling in that project; does that sound  
15           familiar?

16      A     (Shultz) I'm not aware of who did the modeling  
17           on that project.

18      Q     And in that article, the model, well, let me  
19           skip that point.

20                   Yesterday when ESS was here, they said they  
21           worked with RPS on multiple occasions.   Did  
22           anybody tell you about that testimony?   I know  
23           you weren't here.

24      A     (Shultz) No.   I haven't heard about it.

1 Q And they found RPS's work to be good,  
2 professionally reliable, and also that the  
3 models that they had used on many of these  
4 projects turned out to be accurate. Does that  
5 sound familiar to you in any way. Are you aware  
6 of that?

7 A (Shultz) No.

8 Q To the extent that that was ESS's testimony, do  
9 you have any basis to contest that testimony?

10 A (Shultz) Well, like I said, there was no  
11 indication quantitatively that the model was  
12 assessed as far as its accuracy against data  
13 measurements. So we can take their word for it,  
14 but there's nothing to kind of quantify the  
15 uncertainty that was in the model and what that  
16 was. There was one figure in that pamphlet that  
17 shows a predicted plume versus measured plume,  
18 and there were some differences between those  
19 two. Considerable differences, I would say. So  
20 there was no reason that we could see where the  
21 model was accurate based on just the information  
22 in that pamphlet.

23 Q Now, you had that ESS article about the Bayonne  
24 Project in your file for a year or more; is that

1 correct?

2 A (Shultz) I'm not sure how long we had that.  
3 That file.

4 Q So you certainly had the opportunity to do any  
5 sort of independent work that you wanted to do  
6 to figure out the accuracy of that model; is  
7 that correct?

8 A (Shultz) I don't have access to the data so I  
9 wouldn't be able to make that assessment.

10 Q And my understanding was, I think you said  
11 earlier, you've never worked on a jet plow  
12 project before; is that correct?

13 A (Shultz) Not a jet plow project but other  
14 similar projects involving sediment transport  
15 from dredging activities.

16 Q You've had no personal experience then assessing  
17 the accuracy of models that were used in jet  
18 plow projects?

19 A (Shultz) Not the particular model that was used,  
20 but I have experience in assessing the validity  
21 of model performance.

22 Q Did you make any effort during the course of the  
23 work you did on this Project to go out and find  
24 models that were used in other jet plow projects

1 and assess their accuracy?

2 A (Shultz) As far as, I searched out what other  
3 models that have been used in jet plow projects.

4 Q And what did you find regarding their accuracy?

5 A (Shultz) There were not many examples of where  
6 data was measured during construction that would  
7 help to verify the model's performance.

8 Q Am I correct that throughout this process the  
9 Applicant has done additional work several times  
10 to address concerns that various parties,  
11 including you, have raised about the model?

12 A (Shultz) I don't know how many times they've  
13 done the work, but I know they submitted a  
14 revised sediment modeling report.

15 Q You actually submitted comments to DES on this  
16 specific issue, didn't you?

17 A (Shultz) As far as? I'm sorry.

18 Q As far as being concerned about the model.

19 A (Shultz) Yes. We've explained our concerns.

20 Q Dawn, let me go back to Applicant's Exhibit 208.  
21 This is the GeoInsight chart that Mr. Dacey  
22 prepared, and I want to look on page 1 for  
23 proposed Conditions 2 and 3. These conditions,  
24 I think that you specifically asked DES for

1 additional modeling. Does that sound familiar?

2 A (Shultz) Yes. We have.

3 Q And Dawn, can you scroll over so we can see  
4 DES's reaction? According to Mr. Dacey, it was  
5 not incorporated into the permit conditions; is  
6 that right?

7 A (Shultz) That's right. I don't think it would  
8 be appropriate to include as a permit condition.  
9 DES did recommend it in the earlier  
10 correspondence that you were going through that  
11 additional modeling should be done.

12 Q Well, if you're saying it's not appropriate to  
13 include it as a permit condition, why would you  
14 have recommended it as a permit condition?

15 A (Shultz) We were just expressing that as another  
16 point of concern that additional modeling would  
17 help in this particular instance.

18 Q So it's not surprising to you that DES rejected  
19 that?

20 A (Dacey) I want to point out this is one of those  
21 areas where the trial run was recommended, and  
22 in lieu of doing additional sensitivity  
23 analysis, the trial run would have enabled  
24 additional data to be collected and to verify

1 some of the modeling outputs.

2 Q So Mr. Dacey, then this is another example of  
3 where DES took a different approach to sort of  
4 get at the same core issue in your opinion? In  
5 other words, let's generate the information  
6 through the trial run instead of generating it  
7 through additional modeling?

8 A (Dacey) I can't get into their head about how  
9 they were addressing things, but we looked at it  
10 and said well, in lieu of them doing additional  
11 modeling, if they're going to do a trial run,  
12 that might be kind of a second best approach.

13 Q So in your Supplemental Testimony which you  
14 filed on July 20th at page 3, lines 2 to 3, you  
15 said quote, "given uncertainty in the model  
16 results and the lack of sensitivity runs."

17 So that phrase suggests that despite all  
18 the information we've seen, you still felt like  
19 there was uncertainty in the model; is that  
20 right?

21 A (Shultz) That's correct.

22 Q And I think Mr. Dacey, you sort of got to the  
23 point that I was interested in hearing from you.  
24 So on lines 3 through 6 of that testimony, you

1 then advocate for a jet plow trial run, correct?

2 A (Dacey) Correct.

3 Q And in fact, DES included a condition in the  
4 permit as you requested including a jet plow  
5 trial run; is that right?

6 A (Dacey) It wasn't a condition, but it was a  
7 recommendation.

8 Q And in fact, there is going to be a jet plow  
9 trial run if the SEC issues this certificate; is  
10 that right?

11 A (Dacey) That's the plan that I understand it.

12 Q Okay. Now, Dawn, I want to call up Exhibit CLF  
13 used a while little ago. CLF Exhibit 27. It  
14 dealt with the issue of sedimentation. When Mr.  
15 Irwin was asking you questions, I can't remember  
16 who on the panel he directed these to, but  
17 the -- not that one yet, Dawn.

18 The exhibit, in general, was used for the  
19 proposition that there are rivers that flow into  
20 Little Bay which introduce new sediment into  
21 Little Bay. Do you recall that?

22 A (Jones) Yes.

23 Q He asked you to try to come up with some  
24 comparison between the sediment, Mr. Aslin asked

1           you about this, too, that these rivers introduce  
2           into the Bay versus the sediment that's going to  
3           be discharged by the jet plow. Do you recall  
4           that?

5           A       (Jones) Yes.

6           Q       Now, that's really an apples-to-oranges  
7           comparison, isn't, because in one case we're  
8           talking about new sediment being introduced into  
9           the Bay versus sediment that's already there  
10          that's just being disturbed and settling again,  
11          correct?

12          A       They're not apples to oranges in the potential  
13          for impact to the ecosystem. No matter what  
14          sediments, if they're new or old or in situ,  
15          they're both going to have the same impact.

16          Q       Correct though that there is no new sediment  
17          being introduced by this Project into the Bay?

18          A       (Jones) Exactly.

19          Q       Now, when Mr. Aslin was asking questions to the  
20          Panel about this, he asked you about storm  
21          events, and he asked the question, is there some  
22          way to quantify the amount of sediment that's  
23          stirred up by a storm event. Do you remember  
24          that?

1 A (Jones) Yes.

2 A (Dacey) Yes.

3 Q When ESS was testifying yesterday, at one point  
4 one of the witnesses talked about storm events  
5 and how you can sometimes see the water go from  
6 green to brown. My understanding is what he was  
7 talking about is the storm event stirs up  
8 sediment; is that right?

9 A (Jones) Storm events also bring in significant  
10 new sediments from the watershed.

11 Q In fact, we can all agree that there's no doubt  
12 that when big storms blow through Little Bay  
13 they stir up sediment, right?

14 A (Jones) Yes, they do.

15 Q In fact, Dawn, if you could go to that page in  
16 this report that CLF introduced, they  
17 specifically call out this issue. So that  
18 highlighted text right there says that the  
19 commission members with research or other  
20 experience working in the estuary indicated that  
21 storm events frequently redistribute sediments  
22 within the estuary. So that's what we're  
23 talking about, right?

24 A (Jones) Yes.

1 Q So I understand that you can't, none of you can  
2 quantify how much sediment is stirred up as a  
3 consequence of a storm event, but I'll say to  
4 you, Mr. Shultz, since you were the modeler,  
5 it's fair to conclude that when a big storm  
6 rolls through, it stirs up sediment, it turns  
7 the Bay brown, common sense would dictate that  
8 it's stirring a lot more sediment than is going  
9 to be stirred up by a temporary jet plow run  
10 through a narrow area in the Bay, isn't that  
11 correct?

12 A (Shultz) I don't know if you can state that. I  
13 mean, one of the reasons we wanted to see winds  
14 included in the modeling was that there is the  
15 potential for winds to continue to resuspend  
16 sediments. So if these storm events are wind  
17 events so maybe that's a consequence of that.  
18 It may be that these sediments are introduced  
19 through more of like a riverine event so coming  
20 down to the water ways that enter the system.  
21 So it could be a combination of the two. So it  
22 just depends, you know, how the sediment gets  
23 into the system.

24 Q So it sounds like we agree, natural events can

1 stir up a lot of sediment in the Bay.

2 A (Shultz) Right, that's why we wanted winds  
3 included in the modeling.

4 Q Okay. Let me ask you about sediment testing.  
5 Let's go to your Supplemental Prefiled  
6 Testimony, page 4, Line 36.

7 Now, here you continue, and this continues  
8 over to page 5, line 4. Here you continue to  
9 raise concerns about sediment analysis for  
10 arsenic and copper and that's something we heard  
11 you mention earlier today. Do you recall that?

12 A (Famely) Yes.

13 Q And you suggest that further testing should  
14 still be required. I think that's on page 5,  
15 line 12 and after, does that sound familiar?

16 A (Famely) Yes.

17 Q So Dawn, let me go back to Applicant's Exhibit  
18 208. This is Mr. Dacey's chart again.

19 Now, you already made these same  
20 recommendations to DES, didn't you?

21 A (Famely) Sorry. Say that again?

22 Q You already made those recommendations to DES,  
23 isn't that correct? Let's go to page 2, the  
24 bottom.

1           And I think in, this is the Preinstallation  
2           Condition running over to the top of page 3  
3           where you're talking about this same kind of  
4           testing; is that correct?

5           A    (Famely) Could you scroll up again?

6           Q    Yes. Go up to number 2, Dawn.

7           A    (Famely) Yes. That looks like it's in the line  
8           of that item.

9           Q    If you scroll over, Dawn, so we can see how DES  
10          dealt with this.

11                   And according to Mr. Dacey's  
12          characterization, well, I'm having a hard time  
13          reading it, but you can read it for yourself.  
14          You raised the issue and DES addressed the  
15          issue; is that correct? Mr. Dacey says the  
16          condition requires preparation of a water  
17          quality monitoring and adaptive management plan.  
18          So it partly addresses it, but you still have  
19          some criticism of it; is that correct?

20          A    (Famely) That's fair to say.

21          Q    But certainly we can agree you raised this issue  
22          with DES and they considered it and they  
23          addressed it in the permit, correct?

24          A    (Famely) Again, I can't say what they, how they,

1           what their line of thinking was, but, yeah, it  
2           looks like it didn't end up in the permit.

3       Q     Now, another area of concern you raised was  
4           mixing zones; do you recall that?

5       A     Yes.

6       Q     I'm looking at your Supplemental Prefiled  
7           Testimony on page 3, lines 20 to 40, where you  
8           say you want a mixing zone plan to meet the  
9           requirements of the water quality rules. Do you  
10          recall that?

11      A     (Family) Could you say the page again?

12      Q     Yes. Page 3, lines 20 to 40.

13      A     (Family) Okay.

14      Q     Did you review Wetlands Permit Condition number  
15          44 which I think addresses this specific issue  
16          already?

17      A     (Family) I recall reading it. I don't remember  
18          the specifics of it.

19      Q     So you're not aware of whether DES has actually  
20          already addressed the concern that you raise  
21          here?

22      A     (Family) I believe, and I don't, again, I don't  
23          recall the specific language, but I believe they  
24          required the submission of a Mixing Zone Plan.

1 Yes.

2 Q Okay. Also in your Supplemental Prefiled  
3 Testimony on page 6, lines 4 through 9, you  
4 express concerns about sediment reduction  
5 measures. Does that sound familiar?

6 A (Dacey) Correct.

7 Q Now, I want to go back to Applicant's Exhibit  
8 208 which is Mr. Dacey's chart again. I want to  
9 look at page 2, Condition 1, under  
10 Preinstallation. You already requested that DES  
11 deal with this issue, and I believe they didn't,  
12 though, again, it sounds like, Mr. Dacey, this  
13 is something that you think would be covered by  
14 the jet plow trial run. Is that right?

15 A (Dacey) Not necessarily. I think that we were  
16 referring to the measures that were presented to  
17 reduce sediment suspension or rate of jet plow  
18 crossing and pressure on the jets. We just  
19 wanted to see more alternatives.

20 Q So in sum, having gone through all of this, it  
21 appears that there are a number of places where  
22 DES has chosen to deal with issues you raised by  
23 either not incorporating the condition or only  
24 partly incorporating the condition and you still

1 have reservations about how they dealt with  
2 that; is that fair to say?

3 A (Dacey) Sure.

4 Q So Dawn, I want to call up a new exhibit.  
5 Applicant's Exhibit 254.

6 On March 16th, 2018, the Town of Durham  
7 filed a motion with the Committee called a  
8 Motion to Hire a Drilling Expert, and there  
9 would be no reason that any of you, I think,  
10 would be familiar with this though, Mr. Dacey,  
11 you're nodding your head so maybe you are  
12 familiar with it. Are you?

13 A (Dacey) I'm familiar with the motion.

14 Q Okay. I want to go to paragraph 9 of that  
15 motion.

16 What Durham said in paragraph 9 is that  
17 granting this motion would be consistent with  
18 the clear legislative direction that the  
19 Committee is to give deference to proposed  
20 agency terms and conditions.

21 So in this motion Durham was arguing that  
22 there is legislative direction for this  
23 Committee to give deference to agency terms and  
24 conditions.

1           Do you think with respect to the point that  
2           you raised here where you've contested DES  
3           conditions that they're entitled to deference?

4           A     (Dacey) I don't really have an opinion on that.

5           Q     Okay. Last topic I want to discuss with you.  
6           It's come up a number of times. It's related to  
7           nitrogen.

8                     In your Original Prefiled Testimony which  
9           is TD-UNH Exhibit 2, at page 11, this is where I  
10          think you first raised concerns about nitrogen.  
11          Does that sound right?

12          A     (Jones) What's the date on this document?

13          Q     July 24th, 2017. On page 11.

14          A     (Jones) All right. So yes. This is the first  
15          it came up. I'll take your word for it.

16          Q     And we've seen that this testimony was sent to  
17          DES; do you recall that?

18          A     (Jones) Yes. I suppose it is. Yes.

19          Q     And do you also recall that nitrogen was one of  
20          the topics of discussions at that original  
21          February 15th, 2017, meeting? According to your  
22          notes, Mr. Dacey?

23          A     (Dacey) That's correct.

24          Q     So certainly from the very beginning of when you

1 got involved, DES understood that you had  
2 concerns about nitrogen, fair to say?

3 A (Dacey) I think that's fair.

4 Q And as part of those concerns, there was a point  
5 where the Applicant provided a very detailed  
6 written response trying to address those  
7 concerns. It was June 30th, 2017. Does that  
8 sound familiar to you?

9 I'll put it up then and give you a chance  
10 to look at it. It's Applicant's Exhibit 109.  
11 That's the first page of it. Does this look  
12 like a familiar document to you?

13 A (Dacey) Yes.

14 Q And this document was provided to the Site  
15 Evaluation Committee, and you also had an  
16 opportunity to look at it; is that correct?

17 A (Dacey) Yes.

18 Q And I'm not going to go into detail on it, but  
19 if you could just jump to page 29, Dawn. And  
20 beginning on page 29, going to page 30 and then  
21 again on 32, the Applicant provided detailed  
22 responses to concerns that you raised about  
23 nitrogen. Does that sound familiar?

24 A (Jones) We're reading it over.

1                   So what was your question again?

2       Q       My question was simply at this point in time the  
3               Applicant acknowledged your concerns about  
4               nitrogen and made an effort to try to address  
5               them, correct?

6       A       (Jones) Well, I wouldn't say address it. I  
7               would say respond to it.

8       Q       Okay.

9       A       (Jones) Yes. There's a difference.

10      Q       We agree on that.

11      A       (Jones) Yes.

12      Q       I want to go to Applicant's Exhibit 208, the  
13               comparison chart again, and I think, Dawn, it's  
14               page 4, Condition 4. So one of the things that  
15               you requested of DES as a condition specifically  
16               related to nitrogen; is that correct?

17      A       (Jones) Yes.

18      Q       And how did DES handle that? Can we scroll  
19               over, Dawn? According to Mr. Dacey, the  
20               condition that DES included in the permit is  
21               identical to what you requested. Is that  
22               correct?

23      A       (Jones) So let me just, could you scroll back to  
24               the left?

1 Q Sure.

2 A (Jones) And just see. Okay. This is, this is  
3 under what, you know, there's a whole array of  
4 things. Pre, post, you know, all kinds of  
5 things. This is under what category? So if you  
6 scroll up, Dawn. Yeah. I'm just seeing what --  
7 During Installation. This is part, this is part  
8 of the Water Quality Monitoring Plan?

9 Q Mr. Dacey is shaking his head yes.

10 A (Jones) Okay. There's a lot of moving parts  
11 here so it looks like they addressed it, yes.

12 A (Dacey) Well, I want to find out, we keep saying  
13 they addressed it, but it's my understanding  
14 that the specific conditions are still up, still  
15 being negotiated. So we're not sure what's  
16 going to end up in the final Water Quality  
17 Monitoring Plan which is, that's one of my, our  
18 prior concerns.

19 A (Jones) What will end up in the final monitoring  
20 plan as well as what response will occur from  
21 whatever results come from that monitoring plan.

22 Q Well, let's be clear. When you say the specific  
23 conditions are still being negotiated, they're  
24 not being negotiated. This is the permit

1 condition. Correct? That's not changing,  
2 correct?

3 A (Dacey) I would have to, I'd have to look at  
4 detail in the letter, and it's my understanding  
5 that even issues that are in both the DES  
6 letters are being discussed. So I can't say a  
7 hundred percent that these aren't being  
8 discussed and there's a possibility of change.  
9 So I don't know that.

10 Q There is nothing in the record indicating that  
11 the conditions themselves are still subject to  
12 change, correct? What you are talking about is  
13 implementation of the conditions.

14 MR. PATCH: Objection, Madam Chair. I  
15 think Mr. Needleman misstated the record. I  
16 think when Ms. Allen was testifying she  
17 indicated they were still having discussions  
18 with DES. So I think it's a mischaracterization  
19 of what's in the record. So I object.

20 MR. NEEDLEMAN: Ms. Allen indicated that  
21 there were discussions about implementation of  
22 conditions. The August 31st DES letter  
23 indicates that the conditions themselves are  
24 final.

1 MR. PATCH: I don't think that's correct.  
2 I still object to the question. I think that's  
3 a mischaracterization.

4 PRESIDING OFFICER WEATHERSBY: I'll  
5 overrule the objection. The Committee will use  
6 its own recollection as to what's in the record.

7 BY MS. NEEDLEMAN:

8 Q Okay. So let me turn then to your Supplemental  
9 Testimony. Page 2, line 21.

10 You again raise a concern about nitrogen in  
11 this testimony and then further on, on page 9  
12 you go into a lot of detail about their concerns  
13 about nitrogen. Does that sound familiar?

14 A (Jones) Looks that way.

15 Q This July 20th, 2018, testimony as we saw  
16 earlier was also sent to DES, correct?

17 A (Jones) Correct.

18 Q And five weeks later on August 31st, DES issued  
19 its update letter and with this testimony in  
20 hand it didn't make any changes to any of its  
21 conditions as it relates to nitrogen. Is that  
22 correct?

23 A (Jones) Apparently so.

24 Q So given that you have fully aired this issue

1 with DES on multiple occasions, and DES has  
2 responded in the permit and the permit will  
3 speak for itself, why are you continuing to  
4 raise the issue?

5 A (Dacey) If the testing we requested or the  
6 concerns we had over nitrogen are incorporated  
7 and they do test, the twist is that they're  
8 going to be doing this during the trial run, 21  
9 days before the actual cable run. We're just  
10 not confident that they're going to be able to  
11 digest all that information and make meaningful  
12 changes to the operation. So it's a matter of,  
13 again, not being able to see what those results  
14 are and being part of that interpretation so I  
15 think that's what it comes down to. If we had  
16 all this information now, we might have a higher  
17 confidence level.

18 Q Now, you just said a moment ago you're not  
19 confident that they can digest all this  
20 information. Yesterday I think the Committee  
21 asked the ESS witnesses what they thought of  
22 this 21-day period, and in sum, I think the ESS  
23 witnesses said well, if it's okay with DES, it's  
24 okay with us.

1 A (Dacey) To clarify, and I thought that was a  
2 little muddled in that area, they have 7 days to  
3 collect the data, analyze it, compile it and get  
4 it into a report to the DES. Seven days from  
5 the date of collection of that trial run. There  
6 is a lot of data, hundreds of points and  
7 hundreds of different parameters to evaluate,  
8 tabulate, and get into the document. So they  
9 mischaracterized that a little bit because that  
10 report is due in 7 days. So that's 14 days for  
11 the DES is to review it. I'm not doubting DES  
12 is going to devote all their resources to  
13 reviewing it. I guess I'm little bit dubious of  
14 being able to pull that data together in 7 days  
15 and have a meaningful report that would have an  
16 impact on the final monitoring plan.

17 Q We all agree that DES wrote the condition,  
18 correct?

19 A (Dacey) They agreed to the compromise which was  
20 cutting it down to 21 days before.

21 Q Do you think they would have agreed to that if  
22 they weren't confident that they could implement  
23 it?

24 A (Dacey) They were confident --

1 MR. PATCH: Objection. That calls for  
2 speculation about what DES thinks or doesn't  
3 think. So I object to that question.

4 MR. NEEDLEMAN: I don't think it calls for  
5 speculation at all. I think these witnesses  
6 have illustrated that they have interacted  
7 continually with DES, proposed conditions to DES  
8 throughout this process, and I think they have  
9 very good knowledge about what DES thinks  
10 they're capable of in this context.

11 MR. PATCH: This question is specific to  
12 this particular condition, and in this case and  
13 they have no idea what DES is thinking or isn't  
14 thinking.

15 PRESIDING OFFICER WEATHERSBY: I'm going to  
16 sustain the objection.

17 BY MR. NEEDLEMAN:

18 Q Let me try it a different way.

19 Mr. Dacey, you have expensive experience  
20 dealing with DES in their permitting programs;  
21 is that correct?

22 A (Dacey) Correct.

23 Q In your experience, personally, does DES write  
24 conditions in permits that it can't implement?

1 A (Dacey) That it can't implement?

2 Q Yes.

3 A (Dacey) I've certainly disagreed with some of  
4 the conditions, some of permits I've seen.

5 Q I'm sure you have. We all have at times.  
6 That's not the question though.

7 In your experience, have they written  
8 conditions which they can't implement. Or said  
9 differently, don't they typically write  
10 conditions in the permits that you deal with  
11 that they have an expectation they'll be able to  
12 implement?

13 A (Dacey) I would say that's fair to say.

14 Q Again, Exhibit 2, your Prefiled Testimony, page  
15 1, line 28, we heard this earlier. Page 1.  
16 This is the place where somebody, I'm not sure  
17 who on the panel, estimated the nitrogen loading  
18 would be up to 300 times the discharge from the  
19 town's wastewater treatment plan. Recall that?

20 A (Jones) Yes.

21 Q And I'm correct that there's absolutely nothing  
22 anywhere in this written record that shows that  
23 DES agree with that estimate; is that correct?

24 A (Jones) Or disagrees.

1 Q That wasn't my question. Is there any place in  
2 this record where DES concurs with that?

3 A (Jones) I don't know. To my extent, I don't  
4 know.

5 Q And I assume you're all aware that the Applicant  
6 disagrees with that number; is that right?

7 A (Jones) You raised questions. I don't know that  
8 you disagree with it.

9 Q Let me call up Applicant's Exhibit 253. This is  
10 a response to a Technical Session Data Request.  
11 It's TS 4-21. Are you familiar with this data  
12 response?

13 A (Jones) Probably read it before. I'd have to  
14 reread it again to know what the content is.

15 Q The Applicant notes, I think as others have  
16 noted in this proceeding, that first of all, the  
17 cable crossing is a discrete event. You'd agree  
18 that the cable crossing is a discrete event, the  
19 jet plow?

20 A (Jones) Well, it's over a number of days. I  
21 mean, what does discrete mean? We can pick away  
22 at what definitions are.

23 Q I am not going to argue with you about that.

24 A (Jones) Okay.

1 Q The Applicant also indicated that it believes  
2 that there aren't going to be any measurable  
3 effects of the overall nitrogen concentrations  
4 in Great Bay. So the Applicant certainly is  
5 contesting your 300 number, isn't it?

6 A (Jones) No. I would say that you're, you're  
7 doing apples and oranges here. Nitrogen loading  
8 is a different way of considering nitrogen as a  
9 pollutant than exceedances of concentrations.  
10 That's a really different comparison.

11 Q Are you aware of the September 21st, 2018,  
12 testimony from the Applicant's Environmental  
13 Panel? Were you present for that testimony?

14 A (Jones) No. I was not.

15 Q So I want to pull up 150 to 152. And somebody,  
16 I don't know who it was, asked the Panel about  
17 this issue. I think it was particularly  
18 Mr. Bjornson [sic] who's dealt with this.  
19 You're nodding your head, Dr. Jones. I see  
20 you're familiar with that.

21 A (Jones) I remember the name. I'm just saying  
22 okay. Bjornson. Bjorkman.

23 Q Bjorkman. I'm sorry.

24 A (Jones) Just saw his name there. Yes.

1 Q Dawn, can we pull up the highlighting?

2 So his testimony was that the dissolved  
3 nitrogen that's present in the sediment is very,  
4 very small in relation to what is already there  
5 and present in the water column.

6 Do you disagree with that?

7 A (Jones) Well, according to our calculations  
8 which are on a spreadsheet and shared with  
9 everyone here says that there's a lot, it's a  
10 large amount. I don't know what his  
11 calculations are. I might add that our internal  
12 math, I don't know what his internal math is.  
13 So I don't have any way to compare our actual  
14 numbers to very, very small.

15 Q Okay.

16 A (Jones) I don't know what his basis for saying  
17 this is.

18 Q We'll let the rest of the record speak for  
19 itself on this issue, but suffice it to say you  
20 and the Applicant's expert disagree.

21 A (Jones) That appears to be so.

22 Q Then one final question. You weren't yesterday,  
23 but the ESS witnesses testified that in all of  
24 jet plow projects they've done, they don't

1 recall nitrogen being an issue. Were you aware  
2 of that?

3 A (Jones) No, but I can imagine that would be  
4 something they say. Welcome to Great Bay  
5 Estuary where nitrogen is the premiere issue in  
6 Great Bay Estuary.

7 Q They also testified that they've worked in other  
8 estuaries including estuaries of national  
9 significance, and they also testified that they  
10 didn't believe that there were, I think,  
11 material differences between the two, although  
12 I'm going to let the record speak for itself on  
13 that. Certainly they said they've worked in  
14 other estuaries of national significance. Does  
15 that inform your view at all about this issue?

16 A (Jones) Well, an estuary has physical,  
17 biological, chemical components. Is that what  
18 they're comparing to Great Bay Estuary? I don't  
19 know. If it's the policies driving management  
20 of water quality and ecosystem condition, that's  
21 another whole dimension. So I don't know what  
22 these estuaries of national, what they may be.  
23 They may be pristine. Who knows what condition  
24 he's talking about.

1 Q How many examples can this panel give us of  
2 other jet plow projects where nitrogen was an  
3 issue?

4 A (Jones) I've never researched that so I can't  
5 give you an answer.

6 Q Anyone?

7 A (Shultz) I can't give an answer.

8 Q Don't you think that would have been worth  
9 looking into?

10 A (Johnson) Well, it's, you can look at it that  
11 way. You can just say in Great Bay Estuary,  
12 nitrogen is the premiere issue, and let's take a  
13 look at what impact this activity will have on  
14 nitrogen and put that before everyone and say  
15 that this is an issue that should be dealt with.

16 Q Thank you all. I appreciate your time.

17 PRESIDING OFFICER WEATHERSBY: We'll now  
18 hear questions from the Committee. Ms. Duprey?

19 MS. DUPREY: Thank you, Madam Chair.

20 **QUESTIONS BY MS. DUPREY:**

21 Q Mr. Jones, I believe that you testified earlier  
22 this morning that there had been no assessment  
23 of the system health in the Great Bay Estuary.  
24 Did I misunderstand that testimony? Done in

1 connection with this project?

2 A (Jones) Yeah I think that might be a  
3 misunderstanding.

4 Q Okay.

5 A (Jones) Certainly the health of the estuary is  
6 part of what we're all concerned about here.  
7 And so we're just, yeah, I wouldn't say  
8 something that general, I don't think.

9 Q Okay. I must have misunderstood you. I think  
10 it was with relationship to the oyster beds and  
11 whether DES was really looking at that. So  
12 maybe I'll rephrase the question and we'll see  
13 if we can get at it a different way. You've  
14 expressed a lot of concern about the oyster beds  
15 and also the eelgrass in Great Bay and how it  
16 might be affected by this Project, and you feel  
17 that there are studies that are being proposed  
18 or have been done to determine how they'll be  
19 affected by the Applicant in this process?

20 A (Jones) Certainly some of the dimensions of what  
21 Normandeau has conducted in terms of field  
22 assessments and modeling approaches are trying  
23 to get at some of the implicit issues that  
24 relate to eelgrass and shellfish.

1 Q So have they been done or are they proposed to  
2 be done or neither?

3 A (Jones) I think to some degree there's been some  
4 assessments in that direction. I guess part of  
5 what we're trying to get at is there are gaps,  
6 and there are potentially, you know, not as  
7 comprehensive as necessary studies done.

8 Q And you've been concerned, at least as I  
9 understood it, that possibly some of the oysters  
10 that someone might eat might be unsafe?

11 A (Jones) I think that is a concern because there  
12 are contaminants that are present in the  
13 sediments. This discrete event or whatever you  
14 want to call it is a potential pollution event  
15 where these contaminants can get into the water  
16 column and be taken up by shellfish, and  
17 shellfish don't necessarily, what they pull in  
18 takes a while for them to depurate back out so  
19 for some time period, after contamination, after  
20 a pollution event like this, they would be  
21 contaminated and potentially can cause health  
22 problems, both to the oysters in terms of toxic  
23 contaminants and to humans.

24 Q And how significant of a concern is this to you?

1 A (Jones) I'll just say that there's a lot of  
2 energy that's been put towards, by DES and other  
3 agencies to assess these types of pollution,  
4 types of pollutants. So toxic chemicals,  
5 pathogens, there's been a lot of effort to make  
6 sure that when people do harvest shellfish that  
7 they're going to harvest shellfish they're going  
8 to be able to consume, that consumers will be  
9 able to eat safe shellfish.

10 So that the FDA, DES, Fish & Game, there's  
11 a lot of effort put into towards making, trying  
12 to ensure this happens.

13 Q And I think we looked at a 2018 report --

14 A (Jones) Yes.

15 Q -- that you actually worked on with DES? Did  
16 you phone up any of the people that you worked  
17 with on that report and express this concern  
18 directly to them?

19 A (Jones) This concern is something that I do  
20 research on all the time. I work with Chris  
21 Nash from the Shellfish Program. We do studies  
22 together on some aspects of this. So I guess I  
23 have a continual conversation with DES about  
24 these, this issue.

1 Q It seems different to me. There's a specific  
2 Project that you're concerned is going to put  
3 what I would, if I listen to you, I would  
4 interpret is a massive amount of nitrogens and  
5 possibly contaminants into the water. I guess  
6 I'm just surprised that you didn't pick up the  
7 phone and call someone that you've been working  
8 with on this paper or these projects to express  
9 that serious concern.

10 A (Jones) Well, that's why we put it into the  
11 documents that we've been discussing and as a  
12 concern, we made a calculation, we put it before  
13 people and they read the concerns. I mean, they  
14 read that.

15 Q And yet you feel it's insufficiently addressed.

16 A (Jones) I say that it's, that there has been a  
17 response in terms of setting up the permit and  
18 that some of these things were not included, as  
19 was just pointed out.

20 Q So as I said, it was insufficiently addressed in  
21 your opinion by DES.

22 A (Jones) Yeah, I wouldn't use that word, but I  
23 guess that's conveying that we still think that  
24 there's more that should be done, yes.

1 Q And given the fact that the report, the 2018  
2 report, I believe, was talking to some degree  
3 about new oyster beds that were being reopened  
4 after Portsmouth sufficiently cleaned up its  
5 plant, the border right on this Project area, it  
6 seems surprising that if this concern was as  
7 significant as you make it to be that DES would  
8 not address it further. What do you make of  
9 that?

10 A (Jones) Okay. So just to clarify, that new  
11 condition document that Attorney Irwin brought  
12 up, they're closing some areas of Little Bay  
13 because of Portsmouth for a couple of years.  
14 They're reopening a portion of that area for  
15 shellfishing. Due to other work that they've  
16 done, it has to do with marinas and how many  
17 boats are present in that area. So it's a whole  
18 separate item than Portsmouth.

19 I guess the point I would make is that here  
20 you have this narrow little area that is clean  
21 enough to allow for oyster beds, oyster farming,  
22 for people to go out and really dig for clams,  
23 and that is, and what goes right through the  
24 middle is this cable crossing. So here you have

1 this, pristine, relatively, well, for New  
2 Hampshire estuaries, relatively pristine in  
3 terms of water quality, and here you're going to  
4 drive a jet plow through and stir up all these  
5 contaminants and cause a pollution event. So  
6 that's my concern.

7 Q That's the thing that I guess I'm finding so  
8 surprising, that you feel so strongly about it  
9 and yet DES who has worked on this same issue  
10 for decades, presumably, and worked with you on  
11 it --

12 A (Jones) On general issues, not this specific  
13 Project.

14 Q No, well, it's working on it right now, as are  
15 you. You're not working together on it.

16 A (Jones) Right.

17 Q But my point is you've worked in the same  
18 direction as DES with respect to this, and I'm  
19 just surprised that you feel as strongly as you  
20 do and yet they don't feel the need to institute  
21 further conditions. It just doesn't make sense  
22 to me.

23 A (Jones) It may relate to the rules and  
24 regulations by which they can do things. I

1 mean, we can still have a concern and  
2 potentially there's some devil in the details  
3 about why they're not responding. I don't  
4 really know the whole process of how they put  
5 together a permit.

6 Q Okay. So you're thinking that perhaps that what  
7 you're asking for is maybe beyond DES's ability  
8 to regulate.

9 A (Jones) I think we're both, both parties, DES  
10 and me in this case, are concerned about the  
11 same issues, and I'm not sure to the extent to  
12 which they can write a permit to restrict or  
13 change, whatever. I don't know all that end of  
14 the issue.

15 Q But I assume that we both would agree, I  
16 certainly would, that DES would not allow a  
17 project that was going to produce sick oysters  
18 that people would consume and become sick  
19 themselves.

20 A (Jones) They would do everything they can to  
21 minimize that happening.

22 Q Okay. I want to talk for a minute about  
23 eelgrass, and you had said, and there was an  
24 exhibit that showed there were historic, what

1 was called, I believe, historic eelgrass  
2 habitat?

3 A (Jones) Yes.

4 Q And I wondered what this mean. What those words  
5 mean. Historic eelgrass habitat.

6 A (Jone) So eelgrass is a key species in the  
7 estuary.

8 Q Yes.

9 A (Jones) And people have been evaluating where it  
10 is, how dense is, for a long time. And so that  
11 historic, that cross-hatched representation of  
12 historic eelgrass beds is based on records,  
13 historical records that show that eelgrass was  
14 present there.

15 Q And when? Do we know when?

16 A (Jones) I didn't dig back and find that out.  
17 But there's records going back to the '40s and  
18 '50s and the '60s. Jackson Lab actually has a  
19 nice library full of these kinds of documents  
20 where Normandeau did some of the work and all  
21 kinds of other people have done work to assess  
22 this kind of information.

23 Q Okay.

24 A (Dacey) Can I add something to your prior line

1 of questioning in regard to the DES  
2 incorporating some of Dr. Jones's concerns over  
3 nitrogen?

4 Q Yes.

5 A (Dacey) It's my understanding this is the first  
6 time the SEC or the DES has evaluated a jet plow  
7 project in New Hampshire so it's fairly new to  
8 them, but I'd also point out that they are  
9 addressing it in what they're proposing be  
10 included in the monitoring plans. I think our  
11 biggest issue is the timing of their plans and  
12 their inability to review the plans.

13 Q Okay.

14 A (Dacey) So to say they're not addressing the  
15 issue isn't accurate. They have included the  
16 various forms of nitrogen in the testing during  
17 the monitoring.

18 Q Okay.

19 A (Dacey) With it being condensed so close to the  
20 actual cable crossing, we're not sure what the  
21 value of that information or the ability of them  
22 to digest that information is and use it  
23 appropriately.

24 Q I do understand that. I have to say that

1 looking over your 2018 testimony, one doesn't  
2 come away with a feeling that that's the only  
3 concern that you have. I mean, it comes across  
4 as you really shouldn't be jet plowing. Am I  
5 wrong in understanding it that way? Because  
6 that would be a big help for me.

7 A (Dacey) I think the overall mission or what  
8 we've been asked to do is evaluate whether jet  
9 plowing can be done safely or whether the  
10 Project, the whole Project here can be  
11 protective of the Bay. So we're looking at it  
12 from every aspect. So we've been evaluating  
13 every component of it to see where we have  
14 concerns or where there's uncertainty. So we're  
15 trying to close that gap in uncertainty wherever  
16 we can.

17 Q Okay. Do you think it can be closed?

18 A (Dacey) I think, well, we had a list of  
19 recommendations for additional sensitivity  
20 analysis, for example, that that would certainly  
21 help close that uncertainty. The uncertainty,  
22 sometimes new issues come up, for example, I  
23 mentioned earlier the crossing time. That just,  
24 that just really opens up a lot of concerns.

1 Q Okay. I'm asking these questions because a  
2 minute ago you just said that really what you  
3 were concerned about was the trial run and so  
4 that's not really -- it's not just the trial  
5 run. It's a bunch of things.

6 A (Dacey) So the trial run is kind of the last  
7 defense. So we kind of, so we're at points  
8 where, incorporated before. So they're going to  
9 do a trail run. Okay. They're not going to  
10 model these things. They're actually going to  
11 do a trial run so they can get actual data. So  
12 we said okay. It's not a surrender, but we  
13 still have those concerns.

14 Q Okay.

15 A (Dacey) But they are doing a trial run, and they  
16 have the ability to collect the data and then  
17 look at the model and see how closely they  
18 correlate.

19 Q Right.

20 A (Dacey) Again, it's kind of a, okay, they've  
21 agreed to do it, but we're not sure the value of  
22 doing it that close to the actual cable run.

23 Q Right. My understanding, though, is that the  
24 upshot of the data that you're looking for, that

1 two of your primary things that you're concerned  
2 about or I guess I'll say three of the primary  
3 things that you're concerned about are oyster  
4 health and health of organisms, and also  
5 people's health, eating those organisms;  
6 eelgrass which again goes back to the ability of  
7 fish and wildlife to survive in the area; and  
8 then pathogens. Are there other things that I'm  
9 missing? Can we broadly quantify those as three  
10 of the major concerns that are the reason for  
11 why you're asking for this additional testing  
12 and the trial run and whatnot?

13 A (Famely) Sure. I think there's another area of  
14 concern around the water quality assessment, and  
15 there's uncertainty based on model  
16 parameterization, and there's uncertainty surely  
17 based on the calculations that are made using  
18 this theoretical and conservative approach.

19 Q Okay.

20 A (Famely) Nonetheless, there are, there's a  
21 potential for a water quality violation, and we  
22 can narrow that uncertainty by making some  
23 measurements --

24 Q Okay.

1 A (Famely) -- in the field. Not in the field but  
2 collecting some samples and analyzing them in a  
3 way that most closely mimics what would happen  
4 due to this Project.

5 Q Yes.

6 A (Famely) So from my perspective, doing those  
7 sorts of tests, doing an elutriate test and  
8 measuring the contaminants or exposing organisms  
9 to those contaminants would appropriately narrow  
10 that uncertainty and I think provide the SEC and  
11 DES and the public with more assurance,  
12 hopefully, that this may not be a concern, but  
13 we don't know yet until we do that.

14 Q Right. So you've met with DES twice, and I  
15 presume that you raised that with them in your  
16 meeting.

17 A (Famely) It was in the letter.

18 Q Right.

19 A (Famely) I don't recall the specific discussions  
20 that we had.

21 Q I guess that surprises me about whether if  
22 that's such a concern why would you not have  
23 brought it up with them right when you had them  
24 then and there to take it up?

1 A (Famely) Time is always a limiting factor so we  
2 have a number of concerns. We probably talked  
3 about it. I just don't remember it.

4 Q Okay. So it wasn't talking. Some other things  
5 might have been a bigger concern. The other  
6 things we're talking about.

7 A (Famely) They could have been, yeah. We may  
8 have been talking about modeling or I'm not  
9 sure.

10 Q Okay. Thank you. So I want to go back to the  
11 historic eelgrass habitat. So when we use the  
12 term "historic," it could go back as far as  
13 1940. Do we know when eelgrass last grew in  
14 this area of -- first of all, is there eelgrass  
15 in this area, and how much of it is there in the  
16 area where the jet plow is proposed to go?

17 A (Jones) That's a good question. I don't know  
18 that specifically, you know, the area that the  
19 jet plowing would occur on either side. It's in  
20 the shallow areas. So it would be on either the  
21 west side or the east side. I do know that just  
22 generally in Little Bay there has been recovery  
23 of eelgrass, and that's actually kind of  
24 interesting because some research points to the

1 more oyster farms you have, the more eelgrass  
2 comes around. So there's sort of an interaction  
3 there that's kind of complicated, but, so one  
4 may be related to the other. There's a lot of  
5 oyster farms in there.

6 Q Okay.

7 A (Jones) So I don't know how long ago there  
8 was -- I tried to find that a couple days ago,  
9 but I couldn't, I took, takes a lot of, I'd have  
10 to go back to the experts.

11 Q Okay.

12 A (Jones) I didn't do that.

13 PRESIDING OFFICER WEATHERSBY: Can I ask a  
14 followup to that concerning eelgrass beds? It  
15 was my understanding that where the cable goes  
16 in and out of the Bay there is no eelgrass beds  
17 in that location.

18 A (Jones) I agree, yes.

19 Q But do we know how far or how close the closest  
20 eelgrass is to that corridor where the cable  
21 will be crossing?

22 A (Jones) So one of the things that the eelgrass  
23 expert will tell you is that there can be  
24 eelgrass, but is it a bed, you know, are there

1 strands? They tend to, you know, it's a plant,  
2 it puts out these roots called rhizomes and it  
3 spreads that way and sort of establishes a bed.  
4 So there may be the beginnings of beds even in  
5 that area. I'm not sure. There's no big  
6 extensive thick bed there right now. I would  
7 say that. So somewhere in between nothing and a  
8 big extensive bed, there probably is eelgrass in  
9 the area.

10 A (Famely) I think there was one bed at least on  
11 the figure that Attorney Irwin presented on the  
12 eastern shoreline north of the Project area.

13 PRESIDING OFFICER WEATHERSBY: Do you know  
14 approximately how far away?

15 A (Famely) I didn't know. I didn't look at the  
16 scale of the map.

17 PRESIDING OFFICER WEATHERSBY: All right.  
18 I can go back and look at that.

19 A (Jones) Probably one minute, half a minute boat  
20 ride up the shoreline. That's how I kind of  
21 judge distance in the estuary.

22 PRESIDING OFFICER WEATHERSBY: Depends how  
23 fast the boat's going right?

24 A (Jones) Yes.

1                   PRESIDING OFFICER WEATHERSBY: Quarter mile  
2                   or so?

3           A       (Jones) Yeah, maybe.

4                   PRESIDING OFFICER WEATHERSBY: Thank you.

5           QUESTIONS CONTINUED BY MS. DUPREY:

6           Q       Am I right in understanding that the problem  
7                   with jet plowing and eelgrass is the kicking up  
8                   of the sediment that's prevents light from  
9                   getting through so the eelgrass can grow or is  
10                  it something else?

11          A       (Jones) That's part of it. It's stirring up  
12                  suspended sediments and yeah, these fine-grained  
13                  small particles that are part of the sediment  
14                  makeup can remain in solution for, remain in the  
15                  water column for quite a while. They spread  
16                  around and affect distant eelgrass beds, and,  
17                  again, part of the previous testimony was how  
18                  long does it take for, you know, light,  
19                  attenuation to actually affect the eelgrass. I  
20                  mean, who knows. It's something that can affect  
21                  them because even eelgrass that's, some of it is  
22                  even exposed. It's in intertidal areas during  
23                  really low tides. And even that kind of  
24                  eelgrass can be affected by light attenuation.

1 So I'm not exactly sure the timing of it. What  
2 duration of it.

3 Q So then do docks prevent eelgrass --

4 A (Jones) Yes.

5 Q -- from growing?

6 A (Jones) Yes.

7 Q The shade?

8 A (Jones) Yes.

9 Q And so have people working in the Bay tried to  
10 limit the number of docks for the same reason?

11 A (Jones) There have been, I'm not exactly sure  
12 how it's implemented management agency wise, but  
13 certainly, well, if you want a oyster permit, if  
14 you want to put an oyster farm, in you have to  
15 make sure there's no eelgrass there. I mean,  
16 eelgrass habitat is quite extensively protected  
17 in the estuary. There's a lot of management  
18 dimensions to that.

19 Q Right. I didn't realize that oysters themselves  
20 could, but it makes sense now that I'm hearing  
21 it, would prevent eelgrass from growing because  
22 they're living there so they would be pushing  
23 the eelgrass out.

24 A (Jones) Right, even though there's some research

1 that says it stimulates eelgrass, too, so it's a  
2 tricky thing.

3 Q Okay. All right.

4 A (Jones) Physically they displace each other but  
5 quality wise, they may impact, one may enhance  
6 the habitat for the other.

7 Q Okay. I want to switch to Mr. Shultz, Mr. Dacey  
8 and Mr. Famely. I'm presuming that, Mr. Dacey,  
9 you have an extensive relationship with DES,  
10 correct? Over the years?

11 A (Dacey) Correct.

12 Q And that Mr. Famely and Mr. Shultz, you may not  
13 have any relationship with them.

14 A (Shultz) That's correct.

15 A (Famely) Yes.

16 Q Thank you. And so you're a known quantity,  
17 Mr. Dacey, to DES?

18 A (Dacey) I think so.

19 Q Hopefully in a positive way?

20 A (Dacey) I hope so.

21 Q Okay. So it's fair to say that if you raise  
22 concerns with DES that they would take them with  
23 some seriousness, correct? You're not just  
24 anybody showing up on their doorstep.

1 A (Dacey) I think so.

2 Q Thank you. And I think you all testified that  
3 none of, actually none of the four of you, but  
4 I'm concentrating on the three of you right now,  
5 actually worked on jet plow projects in the  
6 past, correct?

7 A (Dacey) Correct.

8 A (Shultz) Yes.

9 Q And yet we've had testimony that they're fairly  
10 common. Do you know jet plowing to be fairly  
11 common in this industry?

12 A (Dacey) In the cable laying industry?

13 Q Yes.

14 A (Dacey) That's my general understanding.

15 Q And Mr. Shultz, you testified that you've worked  
16 on some projects that I think caused you to  
17 model sediment being disturbed. Was it through  
18 cable laying projects also? Is there another  
19 way of laying cable that we haven't heard about  
20 between jet plowing and HDD?

21 A (Shultz) My experience has not been with other  
22 cable laying projects, but there are other  
23 technologies like a share plow that's not  
24 injecting water into the sediment.

1 Q What are the other Projects that you've worked  
2 on, the types of projects that you've worked on  
3 that have caused you to model into the water?

4 A (Shultz) Potential dredging projects so  
5 excavating of sediments off the sea floor and  
6 having that been a potential source of sediment  
7 in the water column, and more of natural  
8 mobilization of sediments due to high current  
9 velocities in different systems.

10 Q All right. Thank you. I had a question about  
11 the Army Corps of Engineers. Have any of the  
12 three of you worked with the Army Corps of  
13 Engineers?

14 A (Famely) Yes.

15 A (Shultz) Yes.

16 Q What about you, Mr. Dacey?

17 A (Dacey) I have limited capacity.

18 Q Limited capacity. In another Project that I  
19 worked on years ago, there was, the Corps had a  
20 general permit like here and my understanding is  
21 with the general permit, I think I'm using the  
22 right term, that the local state body has the  
23 right to actually grant the permit; that the  
24 Corps doesn't get involved. Is that correct?

1 It's a programmatic permit I think is the name  
2 of it.

3 A (Dacey) I believe there are components of the  
4 permit that the state can make decision on.

5 Q Right. The Corps itself wasn't actually  
6 involved in this to your knowledge, was it?

7 A (Famely) In this Project?

8 Q Yes.

9 A (Famely) Not to my knowledge.

10 A (Dacey) I think the, I believe the Wetland  
11 Permit would have required some input from the  
12 Corps.

13 Q Okay. But the three of you had no contact with  
14 the Corps asking them to become involved in  
15 this. It's my understanding you can overstep  
16 the programmatic permit and actually ask the  
17 Corps to get involved. That happened in my  
18 case. I'm wondering, did you make any inquiry  
19 about bringing the Corps into this?

20 A (Dacey) No. We did not.

21 Q That's true for the three of you?

22 A (Shultz) Yes.

23 A (Famely) Yes. We did not.

24 Q Okay. I think that's all my questions, Madam

1 Chair. Thank you.

2 PRESIDING OFFICER WEATHERSBY:

3 Mr. Fitzgerald?

4 **QUESTIONS BY MR. FITZGERALD:**

5 Q Good afternoon. Following up on a couple of  
6 questions. I think you all made it clear you  
7 haven't worked on cable jet plow projects, but I  
8 do believe one or more of you indicated that you  
9 had done some projects that involved dredging  
10 and sediment dispersion; is that correct?

11 A (Shultz) Yes.

12 A (Dacey) Correct.

13 A (Famely) Correct.

14 Q Would you say in your estimation that -- and was  
15 that dredging via an excavation process or by a  
16 suction dredging vacuum for lack of a better  
17 term?

18 A (Shultz) Both excavation and hydraulic dredge.

19 A (Famely) And I've worked on a project that  
20 looked at mechanical dredging as well as sort of  
21 an overall programmatic siting for disposal  
22 facilities.

23 Q Would you consider the impacts of jet plowing to  
24 be similar to that of dredging? Where you're

1 excavating down and drawing material, drawing  
2 material up through the water column and so on  
3 as opposed to the sort of bottom nature of jet  
4 plowing?

5 A (Famely) Yes. I think both activities mobilize  
6 sediment to the water column. In the case of  
7 dredging, there may be some incidental  
8 mobilization as you're scooping or sucking it  
9 off the bottom, bringing that back up to the  
10 barge. In the disposal capacity, if it's being  
11 disposed at an offshore site it's, being  
12 released from a dump scow and falling through  
13 the water column to the bottom of the ocean  
14 floor.

15 So in many cases the functional aspect of  
16 dredging is similar in that the analyses that  
17 are set up in the regulatory bodies to assess  
18 dredging projects and dredged material disposal  
19 projects are similar because they're looking at  
20 the impacts, potential impacts, of sediment in  
21 the water column and at the bottom once it's  
22 been disturbed.

23 Q Thank you. There's been a lot of testimony both  
24 today and previously relative to the sort of

1 short-term duration and nature of impacts. I  
2 know that there's been some parsing of words  
3 relative to what short-term may mean versus  
4 long-term ongoing impacts such as continuing  
5 sedimentation into the Bay, continuing discharge  
6 from wastewater treatment plans, et cetera.

7 Of all the concerns that you folks have  
8 raised, would any of them rise to the level of,  
9 potentially, of there being a potential  
10 long-term permanent and irreparable harm to  
11 either shellfish, eelgrass, any of the major  
12 environmental issues? Do you see the potential  
13 for significant long-term and irreparable  
14 damage?

15 A (Jones) Good question. Certainly mobilizing  
16 entrained contaminants deep into sediments into  
17 the surface, into the water column and into  
18 surface sediments is now making those more  
19 available. This is a discrete event except for  
20 the concrete mattresses which are permanent  
21 events, I guess, permanent situations so that's  
22 a concern relative to reducing the amount of  
23 natural environment that's present in the Bay.  
24 But in terms of contaminants, I would say that

1 this is where I was making a difference, making  
2 a, parsing words relative to nitrogen  
3 concentrations where yeah, when you suspend  
4 nitrogen into the water column, it's going to  
5 exceed nitrogen concentrations, it's going to  
6 cause pollution so that you're exceeding water  
7 quality conditions for nitrogen. That's going  
8 to dissipate at some point because of tidal  
9 currents.

10 But the concept of nitrogen loading which  
11 is what EPA and DES and PREP and everyone  
12 involved around the estuary, this is the key  
13 indicator, and this is a, it's a significant  
14 nitrogen loading event. And here we are running  
15 around trying to reduce all nitrogen loading in  
16 the watershed, in the fresh water portions of  
17 the watershed and all along the shore, and here  
18 we're considering allowing this large nitrogen  
19 loading event. I just don't see that, that is  
20 a, that is a, you know, again, you're taking  
21 this nutrient and putting it into the, making it  
22 more available on a long-term basis. So I think  
23 that's, you know, how long term that is, I'm not  
24 sure.

1 Q I'd like to follow up on a couple of those  
2 points. Concrete mattresses. Your concern with  
3 them is relative to the fact that they might  
4 displace potential eelgrass beds. Is that the  
5 primary issue?

6 A (Jones) That certainly is its occupying space.  
7 It's no longer going to be used by benthic  
8 organisms or eelgrass or anything else.

9 Q Okay. But I think we heard significant  
10 testimony that those, other than eelgrass, those  
11 organisms acclimate and actually grow on the  
12 concrete?

13 A (Jones) Yeah, it will be a different ecosystem,  
14 but certainly there are organisms like any  
15 surface that will settle on and colonize.

16 Q Okay. I did a quick calculation, and I believe  
17 the DES permit allows for some 8,000 square feet  
18 of concrete mattress, and it's my understanding  
19 that that is the most, that is the worst case  
20 because DES asked the Applicant to permit, as I  
21 understood it, more than they thought they might  
22 need so that they didn't have to come back and  
23 revise the permit, and I believe the original  
24 estimate was something around 5,000. I don't

1 think, it's my understanding that the actual  
2 amount didn't grow, but DES asked for additional  
3 amount to be permitted.

4 So if you use that 8,000 square foot  
5 estimate, that calculates out to 3/10,000ths of  
6 a square mile and I believe there were, I just  
7 took a ten by ten square area for the size of  
8 the Great Bay. That may be small or large, I  
9 don't know, but that's 100 square miles. So do  
10 you think that 3/10,000ths of a square mile --  
11 and one question I have. Does eelgrass grow all  
12 throughout the Bay or is it only on shore areas?  
13 Does it grow in the --

14 A (Jones) Mostly in shallow areas.

15 Q So that 3/10,000ths of a square mile do you  
16 think would be a significant inhibitor of  
17 eelgrass compared to the --

18 A (Jones) It's an impact. I agree with you. It's  
19 a small area compared to the overall area of  
20 potential eelgrass habitat. But there's every,  
21 there's so many different management approaches  
22 that are trying to prevent any loss of eelgrass,  
23 and here you're allowing it. So I guess it's  
24 just, you know, it's a legitimate thing to say

1 well, little bit, that's okay, but none is --  
2 otherwise, there's no allowance for any loss of  
3 eelgrass habitat.

4 Q I'm just trying to understand the magnitude.  
5 That's all. Not making any commentary on it.

6 A (Jones) Right.

7 Q So also my understanding is that there are  
8 significant stressors. When I looked at the  
9 State of the Estuaries Report, it reads over  
10 time eelgrass habitat indicates a diminishing  
11 ability to recover from periodic disturbances  
12 such as stress from extreme storms.

13 So in areas where eelgrass once was, is it  
14 more likely than it would grow back there or is  
15 it, or if it's gone from an area does that say  
16 that's an area that's lost?

17 Let me also correct myself. Those areas,  
18 those strips that were shown on the map, those  
19 were areas where there once was eelgrass?

20 A (Jones) Correct.

21 Q But is no longer now; is that correct?

22 A (Jones) Correct.

23 Q Are those areas more likely or less likely to  
24 have eelgrass habitat return where it once was?

1 A (Jones) I'm not sure what the comparison is, but  
2 the physical depth, the sediment type is  
3 conducive to colonization by eelgrass so they  
4 are, they would be more likely than the channel,  
5 the deep channel or anywhere else to, yes.

6 Q Okay. Good, thank you. Relative to suspended  
7 solids, there was some discussion this morning  
8 and some of the calculations that were  
9 discussed, I had a hard time following, but I  
10 believe I heard that this Project would disturb  
11 a potential thousand cubic yards of sediment,  
12 understanding that's composed of different sizes  
13 and so on, and that a cubic yard was  
14 approximately one and a half tons. So that  
15 would give us about 666 tons of sediment  
16 disturbed. And going back to the report that  
17 Mr. Needleman presented from the legislative  
18 commission?

19 A (Dacey) I think you did the calculation  
20 backwards. I think it's 1500 tons.

21 Q One cubic yard equals one and a half tons,  
22 right?

23 A (Dacey) Correct.

24 Q Okay. Yes. 1500. Yes. Okay.

1           So I believe the figures that were  
2           presented in that report with were on the order  
3           of 7 to 9 tons per square mile of estuary, and  
4           looking at the Estuary Report, it references  
5           1036 or somewhere over 1000 square miles of  
6           estuary. So that loading would result in  
7           somewhere between 7 and 9,000 tons annually  
8           because those were tons per square mile of  
9           estuary per year. Does that sound correct?

10       A    (Shultz) I believe the square miles are in  
11       reference to the watershed area. So number of  
12       square miles in the watershed.

13       Q    The watershed is much bigger than just the -- so  
14       the figure would be even potentially  
15       significantly larger. I'm using a conservative  
16       number then, right?

17       A    (Shultz) Potentially. I'm not sure of the  
18       watershed size.

19       Q    So the watershed has to be larger than the  
20       estuary itself. So if the estuary is one  
21       thousand acres, there's potentially much, much  
22       larger amount of watershed. So if you, in any  
23       case, even if you limit it to just that one  
24       thousand square miles of estuary, that's 7 to

1 9,000 tons per year versus the potential 1500  
2 tons on a one-time basis. Again, I'm making no  
3 inference. I'm just trying to get an  
4 understanding of the order of magnitude of the  
5 potential disturbance versus the ongoing inputs  
6 of suspended solids. Do those numbers sound  
7 correct?

8 A (Jones) It was a little hard to follow Attorney  
9 Irwin, but we hadn't seen that data before so it  
10 was 9.5.

11 Q I believe it was --

12 A -- tons per square mile. I don't know if it's  
13 yearly or what, it's hard to follow.

14 Q I believe it said tons per square mile of  
15 estuary per year.

16 A (Jones) I don't know.

17 Q I don't know if we have that exhibit. Assuming  
18 that's the correct number, would you agree with  
19 those calculations?

20 A (Jones) Yeah, the way you did it, yeah.

21 Q Okay. Okay. There was some discussion of the  
22 measuring of contaminants in core samples and  
23 the various depths, and there was some testimony  
24 that it might not be an accurate representation

1 because there might be more contaminants in the  
2 surface levels of those cores versus down deep.  
3 But then I believe one of you stated that the  
4 way those were done was that those four feet  
5 were, for lack of a better word, homogenized so  
6 the top part might be diluted, but the bottom  
7 part, so even though that small amount is on the  
8 surface, the jet plow is going down to four feet  
9 so wouldn't it tend to be representative of what  
10 the jet plow is actually excavating even though  
11 those contaminants are on the surface level?

12 In other words, what's in the surface is  
13 going to be released. If you've got to excavate  
14 two inches, it's also going to be released. If  
15 you excavate down to four feet, if the sample is  
16 a composite of what's over four feet, you take  
17 that total and put it into the Bay, you're going  
18 to see the same level of contaminants put in,  
19 right?

20 A (Famely) I think your question is getting at the  
21 representativeness of the sample interval that  
22 we're homogenizing.

23 Q Right.

24 A (Famely) Or that the Applicant homogenized in

1           their screening assessments and calculations of  
2           water quality, and what we've understood so far  
3           from people with experience with these jet plows  
4           is that they, let's say it's digging, it's  
5           fluidizing sediment down to four feet. I'm  
6           sorry. If it's fluidizing sediment down to five  
7           feet, it's the top, let's say, quarter of that  
8           profile.

9           Q     Um-hum.

10          A     (Family) That is actually subject to  
11          mobilization to the water column. So below a  
12          certain depth, which we think that we have a  
13          basic handle on, sediments in that deeper  
14          portion are just going to get fluidized and stay  
15          in place. And so it's the top portion, call it  
16          whatever you want, it's that, I think it's the  
17          10 to 35 percent number that's been in some of  
18          these assessments. That's the piece of the  
19          sediment that gets into the water column. There  
20          may be other things below that, but you don't  
21          want to bias the sample by the other weight and  
22          other contaminants in stuff that's not going to  
23          get mobilized. So the representativeness of the  
24          assessment is hinging on an understanding of

1 what portion of the sediment, and we think it's  
2 that top portion gets mobilized.

3 Q That sounds reasonable.

4 A (Famely) Did that answer your question?

5 Q Did you have an opportunity to discuss that with  
6 DES in your meetings, and did they share your  
7 concern that those characterizations from zero  
8 to four feet might not be representative?

9 A (Famely) Yeah. We had that conversation, and  
10 then the revised Sediment Characterization  
11 Report was released. In that report, the  
12 sediment cores were collected to two feet, and  
13 that portion was homogenized, the thinking being  
14 that that again was the portion that would be  
15 mobilized.

16 The only problem was that I think there  
17 were six cores that were collected as opposed to  
18 the 12 cores in the original report. And of  
19 those six cores, only a portion of the original  
20 contaminants of concern were analyzed.

21 A (Jones) One of the other issues associated with  
22 compositing to depth -- first of all, the  
23 initial assessment of the sediment contamination  
24 levels was using data that part of my group had

1 collected and EPA had analyzed that went to two  
2 centimeters, National Coastal Condition  
3 Assessment, and we said wait a minute, if you're  
4 plowing to 8 feet, what's below there. No one  
5 knows. You should really assess this. So it  
6 was good that that was done. Now we have some  
7 new data on that.

8 But part of it is if you take, if you take  
9 this much sediment and you analyze for  
10 contaminant versus homogenizing this much, your  
11 signal is going to be harder to pick up if it's  
12 all up here. You're right. It would represent  
13 what would be loaded, but in terms of even being  
14 able to detect some of these things which are a  
15 concern at very low levels, you're going to  
16 dilute it out and it potentially wouldn't even  
17 detect some of these compounds. So if you're  
18 taking this much and mixing it together, you're  
19 diluting out the signal and your analysis may  
20 not even pick up and say this stuff is not even  
21 there whereas it may be present.

22 A (Famely) So we do assessments a lot where we're  
23 taking a core and splitting it by one-foot  
24 intervals or six-inch intervals. When I'm doing

1 an ecological risk settlement, I'm just  
2 concerned with the biologically active zone  
3 which is the top 6 inches to a foot.

4 The point is we want to be basing the data  
5 and the assessments on data that is  
6 representative of what's happening with the  
7 Project.

8 Q Attorney Needleman presented a comparison chart  
9 that I believe had been prepared by Mr. Dacey of  
10 the DES conditions versus, I mean, of your  
11 recommendations versus the conditions that DES,  
12 either the action they took or the conditions  
13 they ultimately adopted. I assume that chart  
14 was prepared for purposes of making a  
15 recommendation to your client that as to whether  
16 your concerns had been appropriately addressed,  
17 and I know some of them were addressed by the  
18 implementation of a trial run and not a specific  
19 condition but so on.

20 But did you express, following the  
21 compilation of that, did you express that there  
22 had been any significant gaps that were not  
23 addressed either as a condition by DES or as a  
24 part of the trial, jet plow trial information

1 that would be generated?

2 A (Dacey) So one thing I'll point out is it's kind  
3 of, as you know, the process I've been involved  
4 in so that's kind of a snapshot in time.

5 (Court reporter interruption  
6 for simultaneous talking)

7 A (Dacey) It's kind of a snapshot in time of what  
8 our remaining concerns would be. So the bigger  
9 issues, we had recommended, I believe,  
10 independent review of horizontal directional  
11 drilling which DES recommended but did not  
12 require. And then the trial run was, again,  
13 recommended by the DES but not required. So we  
14 pointed that out and then we, the reason I point  
15 it out that it's kind of an evolution is the,  
16 you know, the Applicant then offered to do the  
17 trial run, but it's the minutiae in there that  
18 we're concerned about is getting those same  
19 concerns addressed and being able to address  
20 those with the trial run. The way it's being  
21 implemented, will our concerns be addressed or  
22 not. So we're still not sure, even though we  
23 might have highlighted some of these things in  
24 green as being addressed, we don't know if

1           they're addressed because we don't have the data  
2           yet.

3           Q     Okay.

4                     MS. DUPREY:    Could I just have a followup?  
5           I didn't hear what you said about HDD.  What  
6           were you referencing at the beginning of your  
7           remark?

8           A     (Dacey) So I believe at the beginning of that  
9           table we might have called out, we had requested  
10          that the DES or that the DES required that an  
11          independent review of HDD be done.

12                    MS. DUPREY:    Okay.  Thank you.

13          A     (Shultz) I'll just add that we still had  
14          concerns with the modeling and how that was  
15          implemented because that informs the mixing zone  
16          as well as the water quality monitoring and that  
17          also help inform how the jet plow trial will be  
18          conducted.  So that was a remaining concern.

19                    MR. FITZGERALD:  And does the --

20                    MS. DUPREY:    Could I have a followup on  
21          that particular point?

22                    MR. FITZGERALD:  Yes.

23                    MS. DUPREY:    We talked about this a bit  
24          earlier.  The monitoring that you wanted to have

1 done, I recognize that DES hasn't done a jet  
2 plow Project before but neither have you, and  
3 you are justified, so to speak, as being experts  
4 in this case because other work that you've done  
5 gives you similar experience to be able to  
6 evaluate. Is that correct?

7 A (Dacey) Yes.

8 MS. DUPREY: Why isn't it true for DES?  
9 Why aren't other dredging projects that they  
10 reviewed and they've been reviewing things for  
11 decades, why would that not qualify them to be  
12 able to review sampling and monitoring in this  
13 case?

14 A (Dacey) I think my broader point was the ability  
15 of the DES to become familiar with all the  
16 information that's available on this project.  
17 We just, as recently in the last couple weeks  
18 we've had additional testimony, and to me some  
19 fairly important information has come out.

20 So I'm not sure how that additional  
21 information is transmitted to the DES, and as  
22 you could see, as Mr. Needleman pointed out,  
23 they took a lot our suggestions to heart in the  
24 implementation of the February and the August

1 letters. So I think they appreciated that  
2 additional help, if you will, in pointing out  
3 those concerns.

4 But now we have a bunch of plans that have  
5 either been submitted in one form or another but  
6 they're going be revised, their due date is  
7 beyond the timeline of this Committee  
8 presumably. So we won't be reviewing those  
9 plans or providing critical comments. So that's  
10 our, I think that's what I was getting at.

11 MS. DUPREY: Okay. What are the changed  
12 plans? I don't think I'm familiar with them. I  
13 mean, I know that a couple of the plans the  
14 Historic District wasn't correctly mapped which  
15 wouldn't have anything to do with this. What  
16 are the changes that you're referencing?

17 A (Dacey) Well, there's actually a whole list of  
18 plans. The benthic monitoring plan is one. The  
19 Environmental Monitoring Plan which is the plan  
20 that's going to dictate where is your mixing  
21 zone, if you look at the mixing zone that's kind  
22 of your, that's where they're going to have  
23 higher concentrations that they're basically,  
24 the DES is saying okay, well, as long as you're

1 in that zone, the higher concentrations will be  
2 okay, but if you go beyond that zone that's in  
3 violation.

4 So there's been two versions of that  
5 Environmental Monitoring Plan submitted thus  
6 far, and there's an additional version that's  
7 due, but it's not due at least, I believe it's  
8 either 60 or 90 days before the actual crossing.  
9 That's a key document. It's going to really  
10 dictate where they propose the mixing zone to  
11 be, where they propose the monitoring stations  
12 to be, what depths the water samples will be  
13 collected during the monitoring.

14 And a big one to us would be the ability of  
15 the monitor, the independent monitor to dictate  
16 operations. If there's an exceedance or some  
17 unexpected value that doesn't jive with the  
18 model, do they have the authority to either stop  
19 operations or be sure that operations are  
20 changed.

21 MS. DUPREY: Okay. So when you use the  
22 word "plan," you're talking about the monitoring  
23 plans, you're talking about plans that DES has  
24 requested in the permit that are coming in the

1 future.

2 A (Dacey) Time and time again in both letters but  
3 particularly in the August 31st letter, I  
4 believe it is, they talk about this plan will be  
5 submitted. So there's, I don't know, 5 to 8  
6 various plans that are due.

7 MS. DUPREY: Right. Am I right in  
8 understanding that you would still have the  
9 ability to comment on things? It might not come  
10 before the SEC, but you would still have the  
11 ability after these things are submitted or  
12 anybody, I don't mean you in particular, but  
13 anyone who wanted to critique them would have,  
14 you know, if you were vigilant and observed the  
15 files there you could look at them and make  
16 comments through a letter?

17 A (Dacey) I'm not aware of the public comment  
18 process in whether a draft would be available  
19 before they were issued. I'm just not aware of  
20 that process.

21 MS. DUPREY: Okay.

22 A (Dacey) I don't believe that's the case.

23 MS. DUPREY: All right. Thank you.

24 PRESIDING OFFICER WEATHERSBY: Just to

1 follow up on that real quick. It seems as  
2 though you and others may just wish to comment  
3 on some of these plans, monitoring, sediment  
4 monitoring plan. If there was a 30-day or  
5 14-day comment period where once the report was  
6 submitted it would be part of this docket and  
7 people would have a comment period to submit  
8 comments on the plan to DES, the DES could then  
9 take into consideration when approving or  
10 working with the Applicant to modify its plan,  
11 would that give you some comfort or satisfy your  
12 concern?

13 A (Dacey) I think that would go a long ways.

14 QUESTIONS CONTINUED BY MR. FITZGERALD:

15 Q Followup on that. Are you in your experience  
16 with DES familiar with the situations in which  
17 DES has required a plan subsequent to a permit  
18 and that that plan is subject to DES review and  
19 acceptance so that if the plan doesn't meet  
20 DES's requirements and objectives as part of the  
21 condition that if it doesn't approve the plan,  
22 in your experience do those Projects go ahead  
23 even though the plan has not been accepted by  
24 DES? Have you run into situations like that?

1 A (Dacey) No. I would say that they wouldn't  
2 continue until the plan was accepted by DES.

3 Q Okay. With regards to the jet plow trial run,  
4 and the, for lack of a better term, digestion of  
5 the information generated, all of the dated  
6 information, it's been characterized as 21 days,  
7 7 days to prepare the record, 14 days, but if  
8 the purpose of the trial run in my understanding  
9 is to demonstrate that the conditions of the  
10 permit and the requirements and all of the  
11 appropriate protections and so on, that's why  
12 you're doing a trial run. If the trial run came  
13 back with information that suggested that  
14 something had been mischaracterized or there  
15 wasn't sufficient information or, you know,  
16 questions that or concerns that caused the trial  
17 run to be implemented, were not addressed, would  
18 you not expect that DES would communicate that  
19 to the Applicant and not allow the project to  
20 commence until those issues had been addressed?

21 I don't see the purpose of a trial run if  
22 you're just going to do it and then go ahead in  
23 21 days, no matter what happens. Doesn't it  
24 seem logical that the DES would have some

1 ability to either approve the test results from  
2 the trial run and concur that the Project can  
3 move ahead?

4 A (Dacey) I think, I'm not questioning the DES's  
5 ability to do that. I'm just saying another set  
6 of eyes on the data and having that time to  
7 digest the data that, that, seven days is a very  
8 short window to get the lab results back,  
9 compile it, look at it. So either, you know,  
10 whether the data is complete, whether there is  
11 other things that might be considered, it's  
12 always best to have another fresh set of eyes on  
13 things or another set of eyes on things. I'm  
14 not -- counting the number of hours that this  
15 group has spent looking at document, I can't  
16 imagine the DES has the resources to spend those  
17 kinds of hours and that the details that we pick  
18 up through looking at a lot of documents, I've  
19 seen some of the documentation presented to the  
20 DES, and sometimes it's in the form of an  
21 excerpt from the modeling report, for example.  
22 I'm not sure the DES has reviewed the whole  
23 modeling report and the appendices and looked at  
24 all the different aspects of that report. So

1           it's just, guess it's a level of detail that I  
2           think that we'd feel more comfortable with if  
3           we're able to look at that data.

4       Q     In the meetings with you, has DES demonstrated  
5           an inability, I mean, Mr. Needleman shared a lot  
6           of information from meetings and letters that  
7           went back and forth and so on. Has DES  
8           demonstrated a lack of capacity to absorb the  
9           information and appropriately address it that  
10          would give rise to your concern that they  
11          couldn't do this in 14 days? Do you have  
12          something to point to that suggests that they  
13          couldn't when they say they can?

14       A     (Dacey) I'm not questioning -- I wasn't really  
15           questioning the 14 days. I was more questioning  
16           the seven days to be able to get a meaningful  
17           report out, and whether, you know, it's really  
18           tough to identify, when you're a reviewer it's  
19           tough to identify what's not there versus what  
20           is there. So if there's missing data or the  
21           need for additional data or some interpretation.

22       Q     Do you have clearcut expectations of what should  
23           be in that report?

24       A     (Dacey) Boy.

1 Q In other words, how would you identify what's  
2 not there if you don't -- do you have  
3 expectations as to what should be there?

4 (Dacey) Well, for example, I'd be looking  
5 at the mixing zone and the placement of the  
6 monitoring stations. How are they going to do  
7 that. They've already shown the modeling that  
8 was done was not representative of the actual  
9 mechanics of how this crossing is going to take  
10 place which is going to be kind of -- it's not  
11 going to be continuous. It's not going to be  
12 over 7 hours. It's going to be pull, set  
13 anchors, you know, I mean, set anchors, pull,  
14 set anchors, pull. It's going to be herky-jerky  
15 going across. So that wasn't modeled, that  
16 distribution. So how do you define that mixing  
17 zone that was so clearly tied to the 7-hour  
18 crossing. I mean, it mimicked the sediment  
19 distribution in the 7-hour crossing. It was  
20 identical to it. So now you don't have a model  
21 to predict this, what's being proposed. So that  
22 would be one key thing that I would look at and  
23 say okay, how was that mixing zone developed,  
24 how are you proposing it.

1           Now, that plan is supposed to come out what  
2           from, my understanding of the testimony that was  
3           recently given was that the Environmental  
4           Monitoring Plan for the trial run will  
5           essentially be the same as the plan for the  
6           cable run, short of any revisions that might  
7           come about. That can't be a hundred percent  
8           accurate because, you know, you're doing it,  
9           compared to the crossing so but both --

10        Q    You don't think the trial run will be  
11           representative of the actual crossing?

12        A    (Dacey) No, I'm not saying that. I'm saying  
13           that the, for example, you're going to have  
14           monitoring stations set up during the  
15           thousand-foot trial run and that for the 5,000  
16           foot cable run. So I'm assuming that the  
17           distribution of monitoring stations would be  
18           different. I'm not sure, I just don't know if  
19           they're going to be setting up all of the  
20           stations that they'd have for the whole run for  
21           not, but I'd be interested in the rationale for  
22           how they're going to take those stations if they  
23           no longer have a model that depicts where they  
24           think the sediment distribution is going to be.

1 Q But in general, DES permitting processes are  
2 public processes, correct? This is not --

3 A (Dacey) That's what I don't know. I don't know,  
4 you know, as I said, it's been back and forth  
5 between the Applicant and the DES refining some  
6 of the requirements that are going to be, I  
7 think, incorporated into some of these plans.  
8 That's clearly not a public process.

9 Q But the issuance of the permit and the  
10 underlying justification for the permit is  
11 public and subject to public input, right?

12 A (Dacey) I don't know the answer to that. There  
13 is usually a comment period for the Applicant.

14 Q Okay. But DES also met with you individually as  
15 well, right?

16 A (Dacey) That's correct, and I think they did a  
17 good job of incorporating our concerns early on,  
18 but now we'll be out being of, essentially,  
19 we'll be out of the process, as I understand it.

20 Q What's the basis for that understanding?

21 A (Dacey) Well, right now, we're not part of the  
22 process right now. As far as negotiations with  
23 DES, we don't know where they stand on various  
24 things.

1 Q But you became part of the process originally by  
2 writing a letter --

3 A (Dacey) Yes.

4 Q -- of concerns to DES. Do you plan to follow up  
5 at this point and say we'd like to provide  
6 supplemental input to DES on this issue?

7 A (Dacey) I'm really not aware of what actions  
8 have been taken to reinsert ourselves.

9 Q Well, are you aware of any reason why DES  
10 wouldn't consider information that you propose?

11 A (Dacey) I'm not aware of that. Again, we  
12 haven't been involved with how communication  
13 takes place with the DES. That's not really our  
14 role. We're asked to get involved, then we get  
15 involved.

16 A (Fameley) I think what Mike is try to say is when  
17 we looked at that August 31st DES letter,  
18 there's some requests for either resubmittal or  
19 submittal of monitoring plans, and I didn't see  
20 any indication of the procedure after that.  
21 Whether, you know, it would be basically for  
22 approval by DES, but that seemed like the end.

23 MS. DUPREY: If I could follow up on that.  
24 There would be nothing stopping you from

1 submitting a letter to DES or going and meeting  
2 with them just as you've done before, correct?

3 A (Fameley) I don't know the process.

4 A (Jones) Right. I mean, there's nothing stopping  
5 us so if that is part of the potential  
6 procedure, I think we can look into it.

7 MS. DUPREY: Exactly.

8 A (Jones) Thank you.

9 PRESIDING OFFICER WEATHERSBY: If I could  
10 jump in, too. It seems from what I'm hearing is  
11 you're not questioning DES's ability to handle  
12 this much information and review the plans and  
13 review the results of the trial run, but you're  
14 more questioning whether they have really the  
15 man-hours, the time to review all this  
16 information and make some assessments based on  
17 that; is that fair to say?

18 A (Jones) I could make a comment. I think there's  
19 a, certainly we have concerns that we have, and  
20 DES has the same concerns but has a lot of other  
21 dimensions to consider when they're putting  
22 together monitoring plans and permits, and I  
23 think because we're focused on our concerns, we  
24 can look at those kind of concerns in more

1 depth. For example, using this much sediment  
2 for analysis of contaminants versus the eight  
3 feet that they were plowing to. You know, that  
4 was a detail that was moving forward until we  
5 said wait a minute, take a look at the 8 feet,  
6 and then other things like that.

7 So it's just, we're looking at this, we  
8 have a focused interest here, and I think that  
9 our ability to look at things and offer  
10 criticisms or suggestions is a useful part of  
11 the process.

12 PRESIDING OFFICER WEATHERSBY: Do you think  
13 it would be advisable to give DES the  
14 opportunity, should they desire, to hire a  
15 consultant to assist them with this process?

16 A (Dacey) Well, the more people looking at it the  
17 better, I think. As I say, just the sheer  
18 number of documents associated with this  
19 Project, that might be helpful.

20 Q Okay.

21 QUESTIONS CONTINUED BY MR. FITZGERALD:

22 Q Dawn, if we could return to Applicant's Exhibit  
23 109, page 29?

24 So as I understand it, this letter, Mr.

1 Needleman characterized it as a response to  
2 questions that were raised by the Counsel for  
3 the Public and the Town of Durham. So it was  
4 intended to address concerns that you all had  
5 contributed, and the Town of Durham sent those  
6 concerns to be addressed. And so looking  
7 through this, starting in the middle of page 29  
8 there where it says Response, I look at a  
9 response for herbicides that indicates not known  
10 or not expected to be an issue in Little Bay.  
11 These are not usually in sediment quality  
12 because they're relatively soluble, et cetera.  
13 So bacteria and fecal coliform bacteria. They  
14 say short-term.

15 Suffice it to say each one of those, each  
16 one of your concerns is characterized and  
17 addressed. So are you familiar, did you have a  
18 chance to review this document? Is there  
19 anything in this from the middle of page 29  
20 there to the top of page 30 relative to  
21 contaminants of concern that you would strongly  
22 disagree with the response that they've provided  
23 here in terms of how these contaminants are  
24 either addressed or not expected to be there or

1           they're short-term or there's a number of -- was  
2           there anything in this list that you strongly  
3           disagreed with?

4           A     (Jones) Yes.

5           Q     And what was that relative to?

6           A     (Jones) I'm just, you know, was that, I'm  
7           looking at it right now. There's some  
8           inaccuracies of what's being said sort of, I  
9           would edit this, take a red pencil to this and  
10          do a lot of editing on this. Like Enterococcus  
11          and fecal coliform are short-lived, found in  
12          water column, have no affinity for settling in  
13          sediment. It's not true, you know, so there's  
14          plenty of information out there that's a  
15          inaccurate statement.

16                 So just looking at each one of them, you  
17          know, Vibrios are not associated with human  
18          waste, Clostridium is, so it's just like I'm  
19          going through here and looking at this and just  
20          seeing there's a lot of inaccurate information  
21          here.

22          Q     And did you develop a response to this to  
23          indicate that you felt that these were  
24          inaccurate?

1 A (Jones) Again, we're working as a team in the  
2 process. We're not sure where we are in the  
3 process. We could do that, but I don't think we  
4 did or I did or we as a group did at that point.  
5 This was certainly a response, it's not, you  
6 know, what's our response back to a response  
7 back to a response, I guess. What were you  
8 going to say, Joe?

9 A (Famely) You covered it.

10 Q Okay. And was this document available for, as  
11 part of your discussions with DES at any point?

12 A (Dacey) I mean, If you look at the date of that  
13 document --

14 Q June 2017.

15 A (Dacey) You have to look at the timeline of our  
16 meetings with DES. I'm not entirely sure of  
17 that.

18 Q I think that takes care of my questions.

19 PRESIDING OFFICER WEATHERSBY: Director  
20 Muzzey?

21 **QUESTIONS BY DIR. MUZZEY:**

22 Q Good afternoon. At the risk of being very  
23 repetitive, I have one question about water  
24 quality modeling because it serves as the basis

1 for a potential violation; is that correct?

2 A (Famely) Based on the assessments and  
3 calculations that have been made, there's a  
4 potential, yes.

5 Q And you feel that more sampling should be done  
6 in order to provide a more accurate model?

7 A (Famely) I think there's a couple components and  
8 pathways in reducing that uncertainty. One is,  
9 first, that that copper calculation was based on  
10 a four-foot core, to my knowledge. So that's  
11 maybe not representative of the, what we're  
12 calling two feet nominally to be suspended.  
13 That's one thing.

14 If we're talking about this in the context  
15 of the ecological risk assessment framework that  
16 we've sort of been using in this process, that's  
17 a Tier II water quality evaluation, using a  
18 numerical, the results of the numerical mixing  
19 model for suspended solids, and comparing that  
20 to theoretical concentrations in the water when  
21 those sediments get mixed to it.

22 If you read the guidance, the next step if  
23 you cannot come to a factual conclusion based on  
24 that analysis, the next step is to take a sample

1 from those sediments that would be mobilized.  
2 This is the elutriate test. Agitate them and  
3 do, perform a serial dilution and measure the  
4 contaminants in that water, compare those  
5 concentrations to the water quality standards.  
6 So it's kind of a real world checking of this  
7 theoretical calculation.

8 There's another component to that where if  
9 there are not water quality standards available  
10 for all of the contaminants of concern or you  
11 may expect synergistic or additive effects, I  
12 think is the terminology, then you would  
13 directly move to a Tier III toxicity test where  
14 you take that same mixture and dilution and just  
15 see if there are impacts on aquatic organisms.

16 Q And thinking of timing, when, would that happen  
17 prior to the monitoring plan being revised yet  
18 again and being put into place and then followed  
19 by the jet plow trial?

20 A (Famely) I think so. I think it's part of the  
21 demonstration that this activity, whether or not  
22 it has impacts on the aquatic communities.

23 Q And have you summarized that anywhere else in  
24 the record besides what you've just explained?

1 A (Famely) Yes, it was, I think it was in both of  
2 our, my testimony. Pretty sure it's in the  
3 Supplemental Testimony. So that would be in the  
4 Supplemental Testimony, page 4, starting at line  
5 28.

6 Q So DES would have access to those  
7 recommendations but yet did not follow up on  
8 them in its August 31st response?

9 A (Famely) I guess if they reviewed the testimony,  
10 then yes, it was probably included in some of  
11 our letters to them.

12 Q Okay. Thank you.

13 PRESIDING OFFICER WEATHERSBY: Any other  
14 questions from any Committee members? Mr.  
15 Fitzgerald. One followup.

16 QUESTIONS CONTINUED BY MR. FITZGERALD:

17 Q I'm sorry. You indicated that Vibrio was not  
18 associated with human waste. What is the source  
19 of that?

20 A (Jones) These are naturally occurring bacteria,  
21 kind of like red tide. You know, we have red  
22 tides every year? That's not from pollution.  
23 They just show up. Vibrios are present in the  
24 estuary. We looked for them in 1969 at the

1 Jackson Estuarine Lab, found them. We've looked  
2 at them for years so they're present. The  
3 concern is that they are, they are, there's been  
4 invasions of strains from other countries. It's  
5 just like e. coli in our guts. We have a  
6 gazillion e. coli in our guts and we're not  
7 sick. You get the wrong strain in your system,  
8 you're going to get sick. Same thing with  
9 Vibrios. There are strains that cause people to  
10 get sick. These have invaded into the Gulf of  
11 Maine, Massachusetts, and not here yet, although  
12 there has been some disease instances from  
13 people eating shellfish in New Hampshire. These  
14 overwinter, they actually, they thrive in  
15 sediments. That's one of their sort of  
16 ecosystem sinks and sources. So they're not  
17 from wastewater.

18 Q Thank you. For real.

19 PRESIDING OFFICER WEATHERSBY: Attorney  
20 Iacopino, do you have any questions?

21 MR. IACOPINO: Just a couple.

22 **QUESTIONS BY MR. IACOPINO:**

23 Q Returning to the elutriate testing and the  
24 subsequent Tier III toxicity testing. How long

1 does that testing take to undertake?

2 A (Famely) I believe that, well, so chemical test  
3 would, all you'd have to do is collect the  
4 sediments, mix them up, dilute them and then  
5 just run them through chemistry.

6 Q I haven't been in a lab since high school. So  
7 can you give me some idea as to how long that  
8 would take?

9 A (Famely) In my experience, if I go out and  
10 collect some sediments or water, I can expect  
11 ten-day turnaround. Sometimes if the lab has  
12 capacity, they might be able to analyze  
13 chemistry in five days. Toxicity tests,  
14 collect, again, collect the sediments, perform  
15 the dilution, and then I believe, I'd have to go  
16 back and look at the RIM guidance, but I believe  
17 most of those tests are around 48 hours.

18 Q Are they particularly complex tests to  
19 undertake?

20 A (Famely) You need to have a specialized lab do  
21 it that's, you know, experienced in toxicity  
22 testing, yes.

23 Q Do you have such a lab?

24 A (Famely) No.

1 Q Are there many of those labs around?

2 A (Famely) Yes.

3 Q And the cost of this type of testing, do you  
4 know what it costs?

5 A (Famely) I don't know the exact cost of these  
6 particular tests. I know that much -- I have  
7 more experience with sediment toxicity tests.  
8 Chronic toxicity tests are about 42-day tests,  
9 and those can be about \$2,000 a sample. So  
10 arguably this is less effort for the lab to do  
11 because it's a shorter time frame.

12 Q Thank you. The Panel indicated some concern  
13 about the short period of time between the jet  
14 plow, the 7 days for the putting together the  
15 report and then 14 days for DES to review that  
16 report and accept the trial run or not. I guess  
17 my question is what's your opinion on what would  
18 be an appropriate period of time?

19 A (Dacey) Something longer than 7 days, but  
20 probably even 30 days would be certainly  
21 adequate considering the resources probably  
22 available to the Applicant, but --

23 Q When you say 30 days, you mean 30 days for the  
24 Applicant to review the data that they collect?

1 Is that the period of time that you're talking  
2 about?

3 A (Dacey) Correct. I mean, certainly could be  
4 shorter. Even, you know, two weeks is better  
5 than 7 days.

6 Q There was some concern indicated by other people  
7 who testified about you want to do this jet plow  
8 in the same season with when the full jet plow  
9 would be done. You want to do the trial run the  
10 same season. Do you agree with that?

11 A (Dacey) That does seem to make sense to do that  
12 in the same season. That was an advantage of  
13 compressing the schedule for the trial run and  
14 the actual run so that seemed to make sense, but  
15 then you get into a logistical issue.

16 Q And Professor Jones, you indicated that, I think  
17 this is what you indicated, there was no  
18 assessment of pathogens and their effect on  
19 oysters and their effect on public health by the  
20 Applicant. Do you recall saying that?

21 A (Jones) Yes. I don't think there was any  
22 measurements of microorganisms by the Applicant  
23 through this whole process.

24 Q There is Condition 46 in the final letter from

1 DES which is the shellfish monitoring program.  
2 Have you reviewed that?

3 A (Jones) Yes.

4 Q That provides, I know you were asked this on  
5 cross, but I wasn't sure that we actually got  
6 the answer. It provides for both the baseline  
7 assessment done before the --

8 A (Jones) Is this here? Okay.

9 Q It also provides for subsequent assessment? Is  
10 that the type of testing that you would want to  
11 see prior to a certificate being granted if one  
12 were to be granted?

13 A (Jones) This is 46?

14 Q I believe it's 46 in the letter. NHDES  
15 Shellfish Program Monitoring and Reporting  
16 Requirements. It's on electronic page 9, I  
17 believe, of the exhibit.

18 A (Jones) Right. Yeah. That's actually related  
19 to chemical contaminants, in particular. That  
20 WET 46. It is talking about shellfish tissue,  
21 but it's talking about it related to analytes,  
22 it related to NOAA, ER-L, screening values.  
23 That's chemical contaminants.

24 Q If pathogens were added to that condition, would

1           that satisfy your concerns?

2       A     (Jones) So yeah, just so I understand, this is  
3           like a list of, this is a list of extra things  
4           to be considered? Is that what this is? In  
5           just trying to --

6       A     (Dacey) My understanding is the DES summarized  
7           the information so far and then the last  
8           paragraph of each section --

9       A     (Jones) Oh, okay.

10      A     (Dacey) Basically that's what you should focus  
11           on, I think, is what the DES is recommending.

12      A     (Jones) Okay. So chemical contaminants and  
13           microbial contaminants I think would be good.  
14           Yes.

15      Q     So adding pathogens, is that the proper  
16           terminology to use?

17      A     (Jones) Yeah, I think it is. Particularly, you  
18           can look at fecal coliforms and that, fecal  
19           coliform is what Shellfish Program uses to  
20           assess, sewage-borne contaminants. It's not,  
21           does not include other pathogens. It's not a  
22           specific pathogen test. That's to give them a  
23           feel, that's what the regulatory framework is  
24           based on is is it safe relative to the fecal

1           contamination. We see with the recent closure  
2           of part of the lower Little Bay oyster farms is  
3           based on virus contamination. That's not  
4           anything that is, would be included in a  
5           routine, you know, microbiological testing. So  
6           to really get at what are concerns you'd have to  
7           do a more, there's more details in what you  
8           would analyze for.

9           Q     Before you get me too confused, what is the  
10           language, if there were to be a condition from  
11           this Committee that that type of testing be done  
12           as part of this shellfish monitoring program,  
13           what is the language you would like to see added  
14           to this?

15           A     (Jones) Microbial pathogens would be good, yes.

16           Q     I have no more questions.

17                     PRESIDING OFFICER WEATHERSBY: Mr. Patch,  
18           do you have redirect? Off the record.

19                     (Discussion off the record)

20                             **REDIRECT EXAMINATION**

21           **BY MR. PATCH:**

22           Q     Do you recall Marcia Brown who was the attorney  
23           for Donna Heald and has worked with some of the  
24           Durham Residents asked you a question about

1 alternative routes, I think it was. And there  
2 was nothing displayed at the time, but I wanted  
3 to display for you an exhibit, I believe it's  
4 Newington 7 that has a summary of route  
5 alternatives that were considered by Eversource.  
6 And just to be clear, this is not, this is part  
7 of this Project. This is not the Transformer  
8 alternative. But is this your understanding of  
9 what she was asking about, the alternatives to  
10 going under Little Bay?

11 A (Jones) Yes.

12 A (Famely) Yes.

13 Q There's a northern route here and a southern  
14 route, and I mean, fair to say you haven't done  
15 any analysis of what the environmental impacts  
16 would be to either one of those routes. It's  
17 really just with regard to particularly Little  
18 Bay and the route down the middle that you've  
19 done the analysis of, correct?

20 A (Jones) Correct.

21 A (Famely) Yes.

22 Q Public Counsel when he ended his  
23 cross-examination asked a question, and I  
24 believe it was related to nitrogen, and it was

1 along the lines of whether one way of looking at  
2 this situation would be that this Project isn't  
3 adding any nitrogen to Little Bay. Do you  
4 remember that question?

5 A (Jones) Yes.

6 Q And do you remember the answer, and is there  
7 more you would like to add in terms of a  
8 response to that question?

9 A (Jones) I think the answer in the end was yes,  
10 you're not adding any more nitrogen to the  
11 overall ecosystem. You're putting it in a  
12 different place as Public Counsel described.  
13 However, putting it in that other place is the  
14 water column which is where the nitrogen is now  
15 available. If it's tied up in the sediments,  
16 it's not available to organisms that would be  
17 affected by it and cause impacts. So yeah,  
18 you're moving it around but you're not moving,  
19 you're moving it to the wrong place.

20 Q I think this is probably for you, Mr. Dacey, but  
21 Mr. Needleman walked you through the contacts  
22 that you and others on the Panel had had with  
23 DES, and I was involved in those, too. Did all  
24 of those contacts stop at some point prior to

1 the issuance of the February 28th letter? In  
2 other words, were there any contacts after? I  
3 think that's, you've been asked that before, but  
4 I want to make sure it's absolutely clear on the  
5 record.

6 A (Dacey) I think I speak for the Panel in saying  
7 that we did not have any contact after that.

8 Q So DES certainly did not reach out to you nor  
9 did Eversource between February 28th and now,  
10 right?

11 A (Dacey) Correct.

12 Q Is it your understanding of how the SEC process  
13 typically works that it's not the case once an  
14 agency issues a Final Decision that there are  
15 contacts with an agency? I know you haven't  
16 been through the SEC process before, but --

17 A (Dacey) It would have been an assumption on my  
18 part, and I'm really looking for your guidance  
19 on whether those contacts can be made so we  
20 didn't anticipate additional contact.

21 Q Did not.

22 A (Dacey) Did not.

23 Q When Mr. Needleman was asking you questions  
24 about that, the chart that you had prepared

1 basically comparing the recommendations that had  
2 been done on behalf of Durham and UNH to DES, I  
3 think you talked in response to some of those  
4 questions about the trial run. Is that correct?  
5 Do you remember that?

6 A (Dacey) Yes.

7 Q And is there a distinction and a fairly  
8 significant distinction between the trial run  
9 that was recommended in the February 28th DES  
10 Final Decision and the August 31 letter that DES  
11 sent to this Committee? I mean, obviously, we  
12 talked about the timing being different. I  
13 think one was 90 days and other 21. But isn't  
14 one of the other differences that, and I'm  
15 looking here at the language in the middle of  
16 this paragraph where it talks about the jet plow  
17 trial that addresses the objectives above  
18 including all monitoring results to NHDES and  
19 the SEC at least 90 days prior to proposed cable  
20 installation.

21 And then it goes on to say, the beginning  
22 of the next paragraph, that NHDES would then  
23 review this information and provide its  
24 recommendations to the Applicant and the SEC.

1           So do you think it's fair to say that the  
2           February 28th Final Decision by DES anticipated  
3           that the SEC would see the results before they  
4           made a decision?

5           A     (Dacey) Based on the way that's constructed, I  
6           would say that's the case.

7           Q     And is that different than the August 31 letter  
8           where I've got up on the screen now and it talks  
9           about how they had originally said 90 days, but  
10          as I read through that paragraph, I don't see  
11          any indication there that DES anticipates having  
12          the SEC review the results of the trial run. Do  
13          you think that's fair to say?

14          A     (Dacey) That's my reading as well.

15          Q     So that's a pretty significant difference  
16          between the two trial runs as indicated in the  
17          two filings that DES has made in this Committee.  
18          Is that correct?

19          A     (Dacey) Yes, and I think that goes to our, one  
20          of our concerns.

21          Q     Now, you've been involved throughout this  
22          process, and to your recollection has DES any  
23          number of times asked for an extension of  
24          deadlines that were imposed by the Committee?

1 MR. NEEDLEMAN: Objection. This is beyond  
2 the scope of direct. Or cross. Apologize.

3 MR. PATCH: Oh, I think it relates directly  
4 to cross. I think there were a number of  
5 questions that were raised about DES and  
6 including questions from the Committee about DES  
7 and whether DES has the capability to be able to  
8 handle all of this in a short period of time.  
9 So I think it's directly relevant to questions  
10 that have been asked.

11 PRESIDING OFFICER WEATHERSBY: Overruled.  
12 You may continue.

13 A (Dacey) Yes, I'm familiar with several documents  
14 where it said we request for extension.

15 Q And so to the best of your recollection, DES has  
16 asked a number of times for extensions because  
17 they could not meet those deadlines.

18 A (Dacey) Correct.

19 Q I think that's all the questions I have. Thank  
20 you.

21 PRESIDING OFFICER WEATHERSBY: Okay. Thank  
22 you. Thank you, gentlemen, for your testimony.  
23 You're excused, and we are adjourned for the  
24 day, returning on Thursday morning. See you all

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then.

(Whereupon Day 13 Morning Session  
adjourned at 1:40 p.m.)

C E R T I F I C A T E

I, Cynthia Foster, Registered Professional Reporter and Licensed Court Reporter, duly authorized to practice Shorthand Court Reporting in the State of New Hampshire, hereby certify that the foregoing pages are a true and accurate transcription of my stenographic notes of the hearing for use in the matter indicated on the title sheet, as to which a transcript was duly ordered;

I further certify that I am neither attorney nor counsel for, nor related to or employed by any of the parties to the action in which this transcript was produced, and further that I am not a relative or employee of any attorney or counsel employed in this case, nor am I financially interested in this action.

Dated at West Lebanon, New Hampshire, this 28th day of October, 2018.

\_\_\_\_\_  
Cynthia Foster, LCR

{WITNES PANEL: SHULTZ, DACEY, FAMELY, JONES}

